CDM

North Hunterdon Voorhees Regional High School District

October 2009

Final Energy Audit Report

Contents

Executive Summary

As part of an initiative to reduce energy cost and consumption, the North Hunterdon Regional High School District has secured the services of Camp Dresser and McKee (CDM) to perform an energy audit for buildings owned and operated by the District in an effort to develop comprehensive Energy Conservation and Retrofit Measures (ECRMs).

CDM's energy audit team visited the facilities on June 3rd and 4th, 2009. As a result of the site visits and evaluation of the historical energy usage of the facilities, CDM was successful in identifying opportunities for energy savings measures.

CDM has also evaluated the potential for renewable energy technologies to be implemented at the District's facilities to offset the District's electrical energy usage. Specifically, the use of solar electric photovoltaic panels was investigated.

In addition, CDM solicited a proposal from a third party electric energy supplier to investigate any additional energy cost savings that may be available for the District.

Not all ECRMs identified as a result of the energy audit are recommended. ECRMs must be economically feasible to be recommended to the District for implementation. The feasibility of each ECRM was measured through a simple payback analysis. The simple payback period was determined after establishing Engineer's Opinion of Probable Construction Cost estimates, O&M estimates, projected annual energy savings estimates, and the potential value of New Jersey Clean Energy rebates, or Renewable Energy Credits, if applicable. ECRMs with a payback period of 20 years or less can be recommended.

Historical Energy Usage

The following table, Table ES-1, summarizes the current annual energy usage at each of the District's buildings. These values can serve as a benchmarking tool, along with the building profiles that have been established through the EPA's Portfolio Manager Program, to quantify the reduction in electrical energy, natural gas, fuel oil and propane usage following the implementation of the recommended ECRMs.

Table ES-1: Annual Energy Usage & Cost (April 2008 – April 2009)						
	Electrical Energy Use (kWH)	Peak Summer Demand (kW)	Peak Winter Demand (kW)	Fuel Use (therms)	Cost for Electric Service	Cost for Fuel
North Hunterdon High School	3,752,728	966	1231	124,618	$610,396	$47,508
Voorhees High School	3,167,300	776	860	81,325	$509,632	$97,665
District Administration Office	76,101	22	16	1,733	$16,943	$2,168
Facilities & Technology Office	35,635	2.9	2.9	NA	NA	NA
N. Hunterdon H.S. Maintenance Garage	30,152	6.9	6.9	4,916	$6,063	$10,884
Voorhees H.S. Maintenance Garage	9,830	6.9	1.3	2,613	$2,082	$3,083

Recommended ECRMs

The following table, Table ES-2, presents the ranking of recommended ECRMs identified for the building lighting and HVAC systems. Additional ECRMs were identified and evaluated, as discussed in Section 4; however, were not recommended due to longer payback periods. This table includes the Engineer's Opinion of Probable Construction Cost, projected annual energy cost savings, projected annual energy usage savings, and total simple payback period for each recommended ECRM. The ECRMs are ranked based on payback period.

Table ES-3 summarizes the Total Engineer's Opinion of Construction Cost, annual energy savings, projected annual energy and O&M cost savings and the payback period based on the implementation of all recommended ECRMs.

Table ES-2: Ranking of Recommended ECRM's					
Overall Ranking (Based on Simple Payback)	**ECRM**	**Engineer's Opinion of Probable Construction Cost[1]**	**Projected Annual Energy Savings (kWH or therms)**	**Projected Annual Energy Cost Savings**	**Simple Payback Period (years)**
1	Voorhees HS – AHU Control Change (Turn off at night)	$4,698	540,800 kWH 31,895 therms	$118,428	0.1
2	Voorhees HS Maintenance Garage – Lighting System Retrofit	$422.5	3,904 kWH	$780.80	0.7
3	Voorhees HS – Lighting System Retrofit	$23,726	140,778 kWH	$28,156	0.9
4	North Hunterdon HS Maintenance Garage – Lighting System Retrofit	$2,093	6,485 kWH	$1,297	1.6
5	North Hunterdon HS – Lighting System Retrofit	$48,961	109,300 kWH	$21,860	2.3
6	District Admin Building – Lighting System Retrofit	$7,175	9,040 kWH	$1,808	4.0
7	Facilities/Technology Office – Lighting System Retrofit	$975	1,081 kWH	$216	4.5
8	Voorhees HS – Heat Recovery Ventilators	$312,822	21,146 therms	$16,624	18.8

1. Engineers Probable Construction takes into account any applicable rebates.

Table ES-3: Recommended ECRM's[1]			
Total Engineer's Opinion of Probable Construction Cost	**Projected Annual Energy Savings (kWH or therms)**	**Projected Annual Energy Cost Savings**	**Simple Payback Period (years)**
$400,873	811,388 kWH 53,041 therms	$189,170	2.1

1. Does not include energy savings associated with Solar Energy System.

Renewable Energy Technologies

Solar Energy

Section 4.3 of the report provides for an economic evaluation of a solar energy system recommended to be installed at each of the District's schools. The evaluation covered the economic feasibility of the District furnishing and installing a solar energy system

under a typical construction contract and to assume full responsibility of the operation of such a system.

Based on the simple payback model, summarized in Table ES-4, it would benefit the District to further investigate the installation of a solar energy system at all eight (8) school buildings. This is primarily based on the initial upfront capital investment required for a solar energy system installation and the 10 year payback period. This payback period justifies installing the solar energy system. Other options such as Power Purchase Agreements are potentially available as well to help finance the project. Solar technology is constantly changing and will most likely continue to lower in price.

Two major factors influencing the project financial evaluation is the variance of the prevailing energy market conditions and Solar Renewable Energy Credit (SREC) rates, with the largest impact to the payback model being the SREC credit pricing. For the payback model, conservative estimates of the SREC's market value over a 15 year period were assumed, as discussed in Section 4.3.

Table ES-4 includes a simple payback analysis for the installation of a solar energy system at all of the District's school buildings. Refer to Appendix F for a more detailed solar financing spreadsheet.

Table ES-4: Simple Payback Analysis for Solar Energy System

Parameter	Solar
Estimated Budgetary Project Cost	$9,610,760
1st Year Production	876,769 kWh
Annual Electric Savings	$141,949
Annual Estimated SREC Revenue	$829,607
Project Simple Payback	**9.9 Years**

Section 1
Introduction

1.1 General

As part of an initiative to reduce energy cost and consumption, the North Hunterdon-Voorhees Regional High School District has secured the services of Camp Dresser and McKee (CDM) to perform an energy audit at six (6) of the District's buildings in an effort to develop comprehensive energy conservation initiatives.

The performance of an Energy Audit requires a coordinated phased approach to identify, evaluate and recommend energy conservation and retrofit measures (ECRM). The various phases conducted under this Energy Audit included the following:

- Gather preliminary data on all facilities;
- Facility inspection;
- Identify and evaluate potential ECRMs;
- Develop the energy audit report.

Figure 1-1 is a schematic representation of the phases utilized by CDM to prepare the Energy Audit Report.

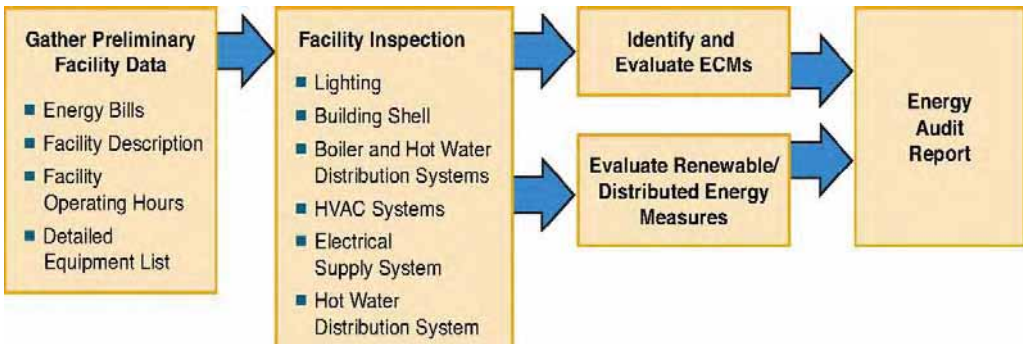


Figure 1-1: Energy Audit Phases

1.2 Background

The six (6) buildings that were included in the energy audit for the North Hunterdon-Voorhees Regional High School District were the North Hunterdon High School, the Voorhees High School, the District's Administration Office, the Facilities/Technology Office and two (2) maintenance garages.

The North Hunterdon High School is a 284,219 ft² building that was originally built in 1950, with extensions to provide additional classroom space built in 1957, 1969 and

2003. The school is utilized for grades 9 through 12, for a total of 1895 students and 265 faculty and staff members. The high school is occupied from 6:30 am to approximately 7 pm during the week and is open on the weekends.

The Voorhees High School is a 276,312 ft² building that was originally built in 1975, with a subsequent addition in 1980. The high school is utilized for grades 9 through 12, for a total of 1182 students and 194 faculty and staff members. The high school is occupied from 6:30 am to approximately 7 pm during the week and is open on the weekends.

The District Administration Building is a 9,028 ft² building that was built in 1988. The building is occupied by 19 employees, approximately 50 hours each week.

The Facilities/Technology Office was also built in 1988 for use as an administration office. It is an 880 ft² building that is occupied by 6 employees, approximately 50 hours each week.

The Maintenance Garage at the North Hunterdon High School was built in 1988. It is a 2,250 ft² garage that is occupied by 3 employees, approximately 48 hours weekly. The Maintenance Garage at the Voorhees High School was also built in 1988. It is 2,500 ft² and has similar occupancy.

1.3 Purpose and Scope

The objective of the energy audit is to identify energy conservation and retrofit measures to reduce energy usage and to develop an economic basis to financially validate the planning and implementation of identified energy conservation and retrofit measures.

The buildings that comprise the North Hunterdon-Voorhees School District were originally designed to comfortably house students and staff with limited consideration for energy consumption. Currently, due to the rising costs of power and the desire to minimize dependence on foreign oil supplies, energy consumption is taking a higher priority across the nation. Significant energy savings may be available with retrofits to the buildings' envelopes, heating, cooling systems and lighting systems. It should be noted that the magnitude of energy savings available is not only dependent on the type of heating, lighting or insulation systems that are in use, but also on the age and condition of the equipment and the capital available to implement major changes.

The purpose of this energy audit is to identify the various critical building comfort systems within the six (6) buildings that are major consumers of electrical energy and are clear candidates for energy savings measures. In addition, the potential for solar electric systems to be installed at each building was evaluated and presented herein.

In addition to identifying ECRMs and the potential for on-site energy generation, an alternate third party electric supplier was contacted in an effort to identify further cost savings available for the Authority, by switching service providers. This is discussed further in Section 5.

Section 2
Facility Description

2.1 North Hunterdon High School

2.1.1 Description of Building Envelope

The energy audit included an evaluation of the building's envelope (exterior shell) to determine the components' effective R-values to be utilized in the building model and to locate and fix any thermal weaknesses that may be present. The components of a building envelope include the exterior walls, foundation and roof. The construction and material, age and general condition of these components, including exterior windows and doors, impact the building's energy use.

The North Hunterdon High School's walls are composite cavity walls consisting of face brick, cavity and concrete masonry CMU back-up blocks. The existing roofing system through the majority of the building consists of insulation and white ballasted roof over flat roof decks. There are sections of the original building that consist of EPDM membrane roofing over flat roof deck. At the time of the audit, CDM was advised that the ballasted portions of the roof had been replaced in 2003 and that the EPDM sections of the roof have been in place since 1986.

The windows in the original portion of the school, 1950 section, are single pane with storm windows. These windows are not original to the building, but were replaced 24 years ago. The windows in the 1957, 1968 and 2003 sections are insulating double paned windows. At the time of the audit, it was observed that the double paned windows in the 1968 section of the building were failing. The failure of the thermal insulating value of the double paned windows becomes apparent as any moisture condenses between the two panes, which is identifiable by any clouding of the windows. It was also noted during the audit that window frame seals were 'reinforced' with duct tape, as the windows had been known to frost. Both the frosting and cloudiness occurring in double paned windows are signs that the seal between the two panes of glass containing the layer of air or gas is broken and allowing for moist air to enter and diminishing the thermal insulation value. These windows are past their expected useful life of ten (10) to twenty (20) years. This is the expected useful life of the windows, as the seals have to be resilient enough to withstand slamming shut of the windows and flexible enough to allow the panes to contract in cold weather and expand in hot.

The original wood exterior doors throughout the high school were replaced with FRP doors in 1995. There are only a few exterior wood doors still in use.

It is recommended that the windows throughout the high school be replaced, which will result in a degree of energy savings. However, due to the square footage of windows throughout the school, it is anticipated that the payback period would be greater than 20 years.

2.1.2 Description of Building HVAC

At the North Hunterdon High School, new HVAC systems were included with each addition to the school, resulting in three primary HVAC systems being utilized to condition the interior space.

The original, 1950 section, as well as the 1957 addition to the building both utilize a low pressure steam system for heating, with DX cooling in some areas. Most classrooms in these areas have unit ventilators with steam coils, and individual thermostats. Two (2) 4,186 MBH natural gas Burnham boilers create steam for the 1950 section, and two (2) 200 HP natural gas Cleaver Brooks boilers create steam for the 1957 section.

The 1968 additions to the school are heated electrically, with classrooms employing unit ventilators with electric resistance coils. Like the 1950's sections, many classrooms in this section are not cooled. Those that are cooled employ window air conditioning units.

The newer 2003 additions to the school use packaged roof-top gas-fired units to heat and cool interior spaces.

2.1.3 Description of Building Lighting

The North Hunterdon High School's existing lighting system consists of 2X2 (2 lamp), 1X4 (1 and 2 lamp), 2X4 (2, 3, and 4 lamp), 4-foot (2 lamp), and 2-foot (2-lamp) T8 linear fluorescent fixtures with electronic ballasts, and T12 linear fluorescent fixtures with magnetic ballasts, along with compact fluorescent, metal halide, and incandescent fixtures. The school has already converted a majority of the building lighting to energy efficient T8 lamps, with electronic ballasts. The remaining T12 linear fluorescent fixtures should be retrofitted with T8 linear fluorescent bulbs, reflectors, and electronic ballasts. The existing incandescent fixtures should be retrofitted with compact fluorescent bulbs, sized to match existing light output of the fixtures. The school utilizes metal halide HID lighting in its gymnasiums, and other athletic areas, and it is recommended that the metal halide HID fixtures be replaced with T8 linear fluorescent high bay fixtures for an increase in quality of light, light output, and significant decrease in energy consumption. In addition, inactive storage and maintenance areas were identified during the audit where the installation of occupancy sensors would increase overall energy savings.

2.1.4 Miscellaneous Equipment

On average, each classroom contains at least one (1) computer, printer, smart board or overhead projector and TV. The school also has five (5) media classrooms which contain 25 to 30 computers each, a library with 36 computers with LCD monitors and a number of printers, a home economics classroom with six (6) ovens, four (4) microwaves, a refrigerator and washer/dryer.

It is recommended that the District consider implementing the standardized use of Smart Strips, as the need arises. Computer peripherals, such as monitors, printers or scanners, continue to use energy even after they are shut off, which adds up over time. The Smart Strip power strips offer surge protection and the ability to monitor the current on a single 'control' outlet. When the computer that is plugged into that single outlet is shut down and Smart Strip shuts off all of the other peripherals on the power strip.

The school also has office areas, faculty rooms and a nurse's office that contain copiers, microwaves, refrigerators, vending machines, soda machines and coffee makers.

The North Hunterdon High School's kitchen has a number of appliances including convection ovens, ovens, mixers, a steamer, refrigerators, two (2) walk-in refrigerators, one (1) walk-in freezer, warming tables and cabinets. It is also recommended that the District consider implementing the standardized use of Energy Star appliances, as the need arises. Energy Star refrigerators and freezers, for example, use up to 40% less energy than models built in 2001. Energy Star appliances will not only reduce the District's utility bills, but will also outperform standard appliances, due to the improved design and advanced technologies.

2.2 Voorhees High School

2.2.1 Description of Building Envelope

The Voorhees High School's walls are composite cavity walls consisting of face brick, cavity and concrete masonry CMU back-up blocks. The existing roofing system consists of insulation and brown ballasted roof over flat coal tar roof decks. At the time of the audit, CDM was advised that the 1975 section of the roof was replaced 10 years ago and that the 1980 section of roof replaced 8 years ago.

The windows at the Voorhees HS are both single paned and double paned. At the time of the audit, failure of the double paned windows was observed, as shown in the adjacent picture. In one case, there was mold growing between the two panes. The double paned windows in the Voorhees High School are also past there expected useful life of ten (10) to twenty (20) years.

The exterior doors are FRP, similarly to North Hunterdon HS; however, it was noted that a few exterior doors require new weather-stripping to minimize infiltration of ambient air. The adjacent picture is of the exit door by the stage. It was also noted that exit D2 be evaluated for infiltration.

It was determined that overall the building envelope is in good condition and is currently providing a high level of insulation. However, it is recommended that the windows be replaced throughout the school with new double paned insulating windows and that all of the exterior doors be evaluated to minimize infiltration.

2.2.2 Description of Building HVAC

The Voorhees High School primarily uses a hot water system for heating, and chilled water system for cooling. Hot water is created with two (2) 250 HP oil-fired Cleaver Brooks boilers. A Trane chiller, located in the boiler room, creates system chilled water.

A number of multi-zone air handling units, with hot and chilled water coils, heat and cool the school. Each unit has actuators to provide individual zonal control via dampers, located where the zone's duct branch feeds off the main duct. These dampers modulate to provide more or less air to the zone, effectively controlling the space temperature.

During the audit, CDM was informed that most of these air handling units run 24 hours a day, seven days a week, due to indoor air quality complaints. The units are on low use or shut off during the summer. Additionally, two of the air handling units incorporate heat recovery wheels that are currently out of service.

While the majority of the school is conditioned using air handling units, several of the classrooms utilize unit ventilators. The unit ventilators incorporate hot and chilled water coils, and are centrally controlled with night setbacks.

2.2.3 Description of Building Lighting

The Voorhees High School's existing lighting system consists of 2X2 (2 lamp), 1X4 (1 and 2 lamp), 2X4 (2, 3, and 4 lamp), 4-foot (2 lamp), and 2-foot (2-lamp) T8 linear fluorescent fixtures with electronic ballasts, and T12 linear fluorescent fixtures with magnetic ballasts, along with compact fluorescent, metal halide, and incandescent fixtures. The school has already converted a majority of the building lighting to energy efficient T8 lamps, with electronic ballasts. The remaining T12 linear fluorescent fixtures should be retrofitted with T8 linear fluorescent bulbs, reflectors, and electronic ballasts. The existing incandescent fixtures should be retrofitted with compact fluorescent bulbs, sized to match exiting light output of the fixtures. The

school utilizes metal halide HID lighting in its gymnasiums, and other athletic areas, and it is recommended that the metal halide HID fixtures be replaced with T8 linear fluorescent high bay fixtures for an increase in quality of light, light output, a significant decrease in energy consumption. In addition, inactive storage and maintenance areas were identified during the audit where the installation of occupancy sensors would increase overall energy savings.

2.2.4 Miscellaneous Equipment

On average, each classroom contains at least one (1) computer, printer, smart board or overhead projector. Each classroom has a TV, which is utilized every day for morning and afternoon announcements, as the school has its own TV station. The school also has three (3) media classrooms which contain 20 computers each, a library with 34 computers with LCD monitors and a number of printers, a home economics classroom with five (5) ovens, six (6) microwaves, three (3) refrigerators, a dishwasher and multiple blenders.

During the audit, it was noted and also advised by a few teachers that the computers do not go into sleep mode. They are consequently, most likely left on 24 hours daily, unless students and/or teachers remember to shut down. Therefore, it is highly recommended that the District consider implementing the standardized use of Smart Strips. Computer peripherals, such as monitors, printers or scanners, continue to use energy even after they are shut off, which adds up over time. The Smart Strip power strips offer surge protection and the ability to monitor the current on a single 'control' outlet. When the computer that is plugged into that single outlet is shut down and Smart Strip shuts off all of the other peripherals on the power strip.

The school also has office areas, faculty rooms and a nurse's office that contain copiers, microwaves, refrigerators, vending machines, soda machines and coffee makers.

The Voorhees High School's kitchen has a number of appliances including convection ovens, ovens, ice machines, refrigerators, a walk-in refrigerator, walk-in freezer, warming tables and cabinets. It is also recommended that the District consider implementing the standardized use of Energy Star appliances, as the need arises. Energy Star refrigerators and freezers, for example, use up to 40% less energy than models built in 2001. Energy Star appliances will not only reduce the District's utility bills, but will also outperform standard appliances, due to the improved design and advanced technologies.

2.3 District Administration Office

2.3.1 Description of Building Envelope

The District Administration Office's is a two level building. The basement walls are composite cavity walls consisting of face brick, cavity and concrete masonry CMU back-up blocks. The first floor consists of plywood deck and walls with wood stud exterior wall framing with vinyl siding.

The existing roofing system consists of 6" of batt insulation and a sloped roof with shingles. The roof is original to the building, construction around 1987.

The windows in the Administration Office are insulating double paned windows. It was determined that the building envelope is in good condition and is currently providing a high level of insulation. As such, any modifications to the insulation system would not prove to be cost effective, from an energy savings stand-point.

2.3.2 Description of Building HVAC

The District Administration Office uses a fuel oil-fired furnace with a forced hot air system to heat the upstairs and electric resistance baseboards to heat the downstairs. The building also has a central air conditioning system, supported by two Lennox DX condensers for cooling. A third, smaller Liebert condenser provides cooling for some of the building computer equipment.

2.3.3 Description of Building Lighting

The District Administration Office's existing lighting system consists of pendant mounted T5HO fixtures, 2X4 (2, 3, and 4 lamp) T8 linear fluorescent fixtures, with electronic ballasts, and T12 linear fluorescent fixtures with magnetic ballasts. The T12 linear fluorescent fixtures should be retrofitted with T8 linear fluorescent bulbs, reflectors, and electronic ballasts. The T5HO fixtures have recently been installed, and no recommendations are being made to replace them.

2.3.4 Miscellaneous Equipment

The Administration Office contains standard office equipment for the 19 employees that occupy the space, including computers, printers, fax machines and copiers.

2.4 Facilities and Technology Office

2.4.1 Description of Building Envelope

The Facilities and Technology Office is a single story building that was built by students at the High School in 1988. The walls are plywood with wood stud framing and wood shingled siding.

The existing roofing system consists of insulation and a sloped roof. The windows in the Facilities and Technology Office are insulating double paned windows. The building was positioned on sloped grade, as shown in the adjacent picture, but the area below the first floor is unfinished crawl space.

2.4.2 Description of Building HVAC

Heating for the Facilities and Technology Office is provided by electric baseboard heaters with individual thermostats. There is a central air conditioning system, served by an outdoor 3 ½ ton Ruud condenser for cooling.

2.4.3 Description of Building Lighting

The Facilities and Technology Office's existing lighting system consists of 2X4 (2, 3, and 4 lamp) T12 linear fluorescent fixtures with magnetic ballasts. The T12 linear fluorescent fixtures should be retrofitted with T8 linear fluorescent bulbs, reflectors, and electronic ballasts.

2.4.4 Miscellaneous Equipment

The Facilities and Technology Office contains standard office equipment for the 6 employees that occupy the space daily, including computers, printers, fax machines and copiers.

2.5 North Hunterdon Maintenance Garage

2.5.1 Description of Building Envelope

The North Hunterdon Maintenance Garage is a 2,250 ft^2 space of steel frame construction with a layer of insulation and vinyl siding. The maintenance garage has a sloped roof and two (2) roll-up doors.

2.5.2 Description of Building HVAC

Garage heating is provided by two (2) Dayton propane unit heaters. No cooling system is employed in the garage.

2.5.3 Description of Building Lighting

The North Hunterdon Maintenance Garage's existing lighting system consists of 1X8 (1 and 2 lamp) T12 linear fluorescent fixtures, with magnetic ballasts. The T12 linear fluorescent fixtures should be retrofitted with T8 linear fluorescent bulbs, reflectors, and electronic ballasts. In addition, installing occupancy sensors in the maintenance garage would increase overall energy savings in this area by providing better lighting control, because this space is only occupied for short durations throughout the day, but the lights are usually left on.

2.5.4 Miscellaneous Equipment

The maintenance garage stores many hand and power tools, lawn mowers, golf carts, etc.

2.6 Voorhees Maintenance Garage

2.6.1 Description of Building Envelope

The Voorhees Maintenance Garage is a 2,500 ft^2 space of steel frame construction with a layer of insulation and vinyl siding. The maintenance garage has a flat roof and two (2) roll-up doors.

2.6.2 Description of Building HVAC

Garage heating is provided by an oil-fired furnace with a small forced-air, duct system. No cooling is provided.

2.6.3 Description of Building Lighting

The Voorhees Maintenance Garage's existing lighting system consists of 1X8 (1 and 2 lamp) T8 linear fluorescent fixtures with electronic ballasts, and T12 linear fluorescent fixtures, with magnetic ballasts. The T12 linear fluorescent fixtures should be retrofitted with T8 linear fluorescent bulbs, and electronic ballasts. In addition, installing occupancy sensors in the maintenance garage would increase overall energy savings in this area by providing better lighting control, because this space is only occupied for short durations throughout the day, but the lights are usually left on.

2.6.4 Miscellaneous Equipment

The maintenance garage stores many hand and power tools, lawn mowers, golf carts, etc.

Section 3
Baseline Energy Use

3.1 Utility Data Analysis

The first step in the energy audit process is the compilation and quantification of the facilities current and historical energy usage and associated utility costs. It is important to establish the existing patterns of electric, gas and fuel oil usage in order to be able to identify areas in which energy consumption can be reduced.

For this study, monthly utility bills were analyzed and unit costs of energy were obtained. The unit cost of energy, as determined from the monthly utility bills, was utilized in determining the feasibility of switching from one energy source to another or reducing the demand on that particular source of energy to create annual cost savings for the North Hunterdon Regional High School District.

3.1.1 Electric Charges

It was also important to understand how the utilities charge for the service. The majority of the energy consumed is electric, as a result of both indoor and outdoor lighting and appliances, such as kitchen appliances, computers, printers and smart boards. Electricity is charged by three basic components: electrical consumption (kWH), electrical demand (kW) and power factor (kVAR) (reactive power). The cost for electrical consumption is similar to the cost for fuel oil, the monthly consumption appears on the utility bill as kWH consumed per month with a cost figure associated with it. The School District's service connections are billed with flat rates or time of day rates for consumption, as explained in Section 3.2.1.

Electrical demand can be as much as 50 percent or more of the electric bill. The maximum demand (kW value) during the billing period is multiplied by the demand cost factor and the result is added to the electric bill. It is often possible to decrease the electric bill by 15 – 25 percent by reducing the demand, while still using the same amount of energy.

The power factor (reactive power) is the power required to energize electric and magnetic fields that result in the production of real power. Power factor is important because transmission and distribution systems must be designed and built to manage the need for real power as well as the reactive power component (the total power). If the power factor is low, then the total power required can be greater than 50 percent or more than the real power alone. The power factor charge is a penalty for having a low power factor. This penalty charge does not impact the School District.

The other parts of the electric bill are the supply charges, delivery charges, system benefits, transmission revenue adjustments, state and municipality tariff surcharges and sales taxes, which cannot be avoided.

3.1.2 Fuel Charges

Elizabethtown Gas is the current supplier and Woodruff Energy is the third party distributer of natural gas for the District. Elizabethtown Gas charges the District for the cost of the natural gas or the Consolidated Adjustment Charge (CAC), which combines the societal benefits charges and weather normalization charges in monthly gas bills. Woodruff Energy bills the District monthly delivery charges.

Allied Oil is currently supplying fuel oil for to the District's buildings. The District is currently charged a flat rate per gallon of fuel oil delivered.

Amerigas currently supplies propane for the District. Amerigas is a major propane company with propane services in 50 states. The District is currently charged a flat rate per gallon of propane delivered.

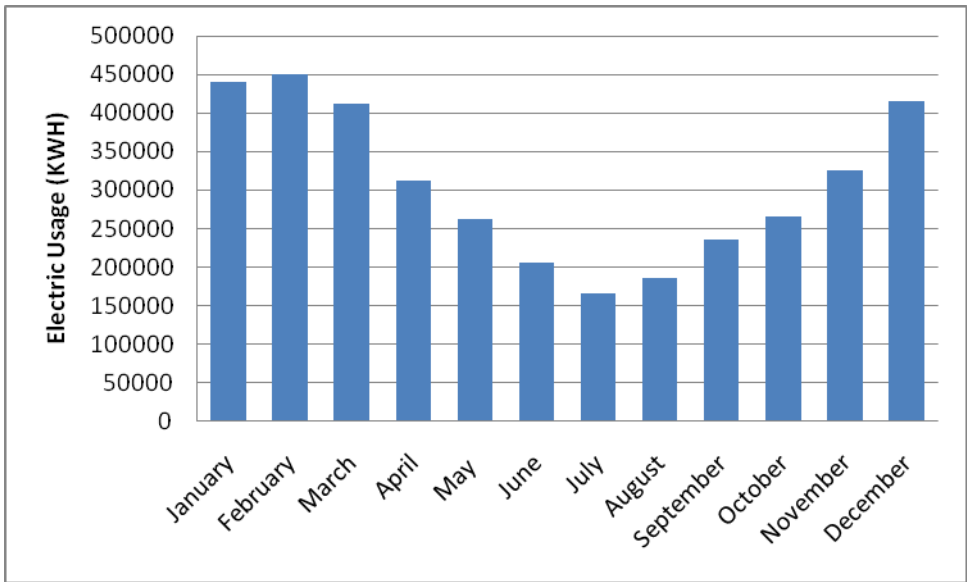
3.2 Facility Results

3.2.1 North Hunterdon High School

Electric power for the North Hunterdon High School Building is fed from a General Secondary Service line from the Jersey Central Power and Light Company (JCP&L). Figure 3.2-1 illustrates the average monthly total energy consumption from August 2006 through April 2009. For example, for the month of January, the bar graph represents average energy consumption for January 2007 and January 2009. The same graphical representation has been carried through for all months and is typical for all graphs presented in this Section. Electrical usage has been averaged by month for the thirty-one month time period to portray a more encompassing monthly usage trend. From this graph, it can be determined that the electrical baseline consumption for the North Hunterdon High School averages around 160,000 kWH / month.

This building is billed with a time of day kWH charge based on JCP&L's current tariff rates. With the time of day service charges, demand charges are still calculated used the highest measured load for the month and billed with a flat rate, but consumption (kWH) charges are billed at a peak (8 am – 8 pm) and off-peak (8 pm – 8 am) rate. Thereby, running the buildings mechanical equipment during off-peak hours would work to sale on the electrical utility bills. Figure 3.2-2 illustrates the average monthly demand load from August 2006 through April 2009.

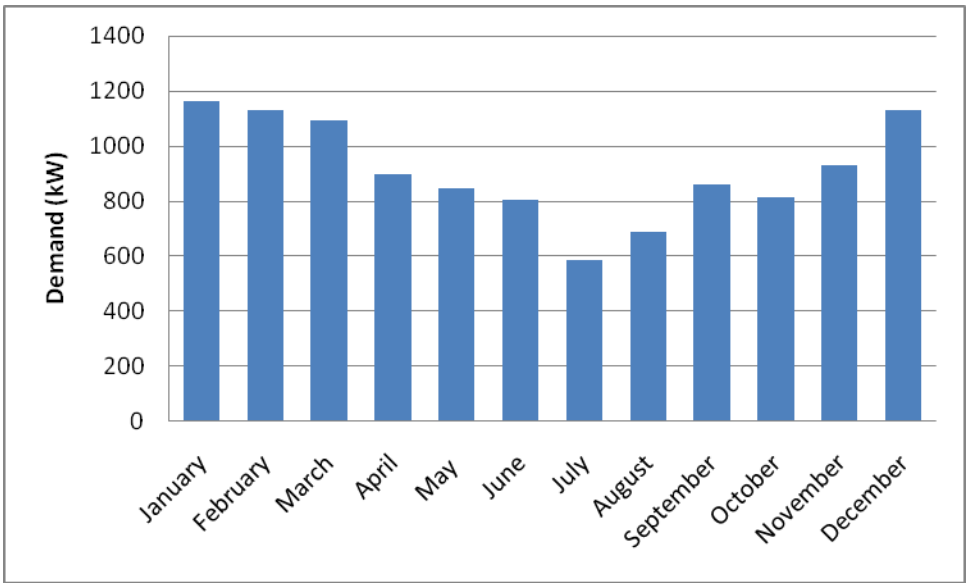
Figure 3.2-1: North Hunterdon High School Building Electrical Usage



The most recent tariff rates available at the time of this audit for General Secondary Service from JCP&L are as follows:

Customer Charge:	$35.25	-
Basic Generation Service (BGS) Energy Charges:	$0.133808/kWH	Peak
	$0.088223/kWH	Off-Peak
BGS Transmission Charges:	$0.005445/kWH	Peak
	$0.005445/kWH	Off-Peak
Delivery Charges:	$0.004815/kWH	Peak
	$0.004815/kWH	Off-Peak
Non-Utility Generation Charges:	$0.016960/kWH	Peak
	$0.016960/kWH	Off-Peak
Societal Benefits Charges:	$0.006444/ total kWH	-
Transitional Assessment Charge:	$0.002021/kWH	Peak
	$0.002021/kWH	Off-Peak
System Control Charge:	$0.000079/ total kWH	-
Demand Charges:	$6.75/kW	October – May
	$7.22/kW	April - November

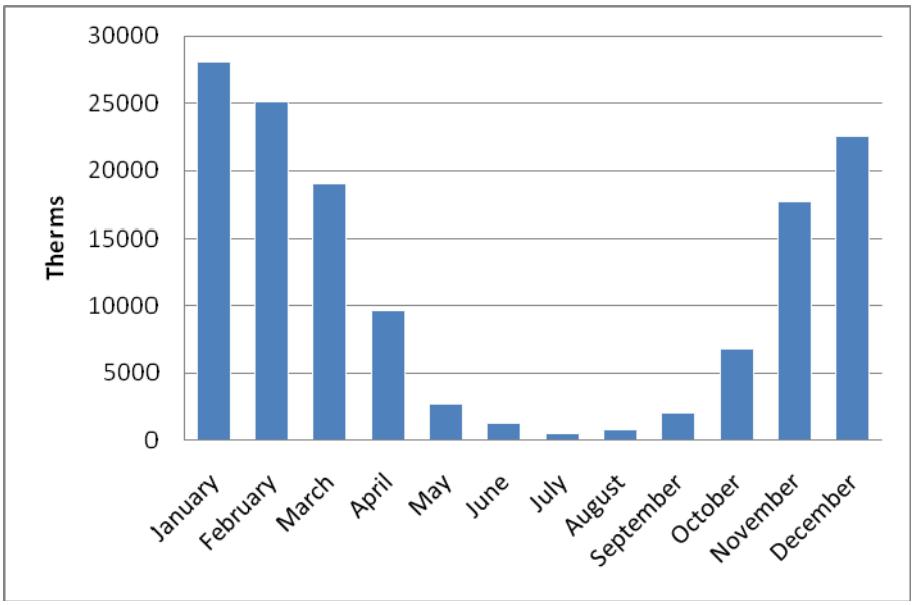
Figure 3.2-2: North Hunterdon High School Maximum Monthly Demand



Refer to Table 3.3-1, in Section 3.3, for average electrical aggregate cost. These tariffs are subject to change quite frequently. For the most up to date tariffs, refer to JCP&L's website. Refer to Appendix A for complete Historical Data Analysis.

The boilers in the North Hunterdon High School that heat the 1950 and 1957 sections and the roof-top units that heat and cool the 2003 section of the high school are run on natural gas. Figure 3.2 -3 illustrates the building's average monthly natural gas consumption from August 2006 through April 2009. Similar to electric usage, gas usages have been averaged by month for the three year time period to portray a more encompassing monthly usage trend.

Figure 3.2-3: North Hunterdon High School Gas Usage



The current tariff rates for natural gas from Elizabethtown Gas are as follows:

Distribution Charge: $0.19539/therm
CAC Charge: $0.07330/therm
Service Charge: $16.15/month
Demand Charge: $0.81

The charges for natural gas from Woodruff Energy are as follows:

Commodity Charge: $0.9144/therm
NJ Energy Reform Tax: 7%

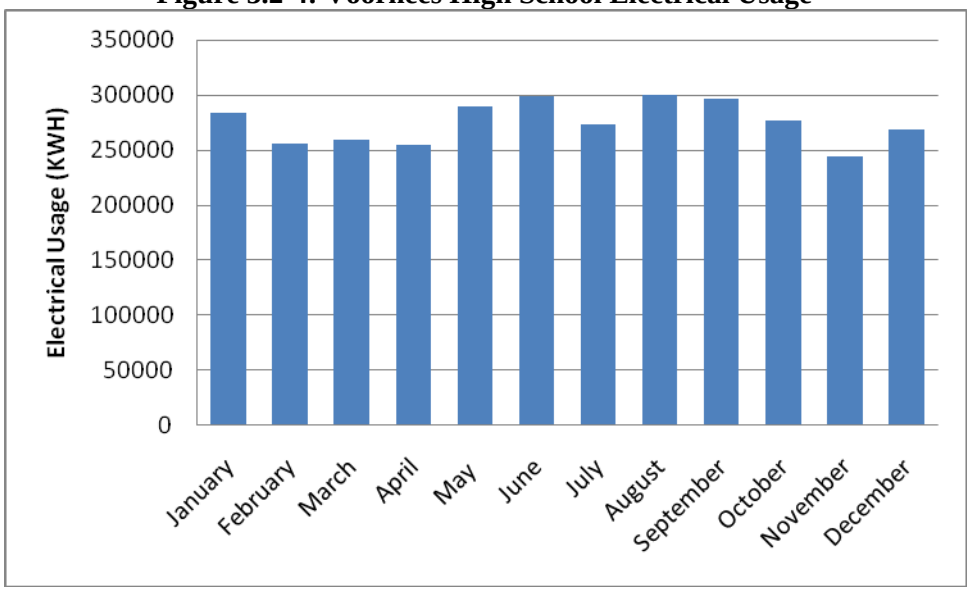
For more on the building gas usage, refer to Section 4.2.

3.2.2 Voorhees High School

Electric power for the Voorhees High School is fed from a General Secondary Service line from JCP&L. Figure 3.2-4 illustrates the High School's average monthly consumption from August 2006 through April 2009. The baseline energy consumption for the Voorhees HS is 245,000 kWH per month.

This building is also billed on time of day KWH charges based on JCP&L's current tariff rates. Figure 3.2-5 illustrates the average monthly demand load from August 2006 through April 2009.

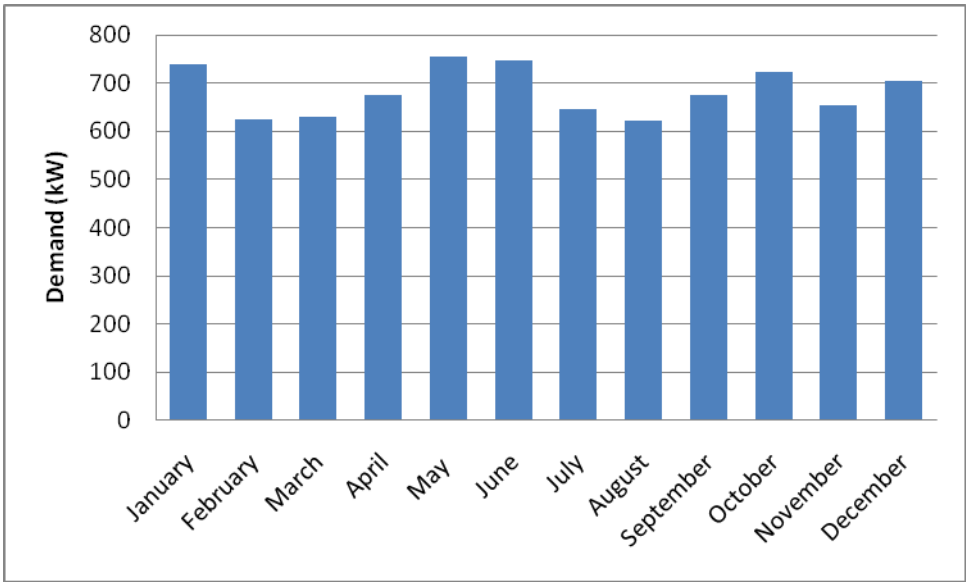
Figure 3.2-4: Voorhees High School Electrical Usage



The current tariff rates for General Secondary Service from JCP&L are as follows:

Customer Charge:	$35.25	-
Basic Generation Service (BGS) Energy Charges:	$0.133808/kWH	Peak
	$0.088223/kWH	Off-Peak
BGS Transmission Charges:	$0.005445/kWH	Peak
	$0.005445/kWH	Off-Peak
Delivery Charges:	$0.004815/kWH	Peak
	$0.004815/kWH	Off-Peak
Non-Utility Generation Charges:	$0.016960/kWH	Peak
	$0.016960/kWH	Off-Peak
Societal Benefits Charges:	$0.006444/total kWH	-
Transitional Assessment Charge:	$0.002021/kWH	Peak
	$0.002021/kWH	Off-Peak
System Control Charge:	$0.000079/total kWH	-
Demand Charges:	$6.75/kW	October – May
	$7.22/kW	April - November

Figure 3.2-5: Voorhees High School Maximum Monthly Demand



Refer to Table 3-1, in Section 3.3, for average electrical aggregate cost. These tariffs are subject to change quite frequently. For the most up to date tariffs, refer to JCP&L's website. Refer to Appendix A for complete Historical Data Analysis.

A portion of this building is heated with boilers run on fuel oil. Figures 3.2-6 and 3.2-7 illustrate the building's average monthly fuel oil consumption in therms from the two accounts that service the Voorhees High School for November through April of 2008-09.

Figure 3.2-6: Voorhees High School Fuel Oil Usage (Allied Oil Account #433240)

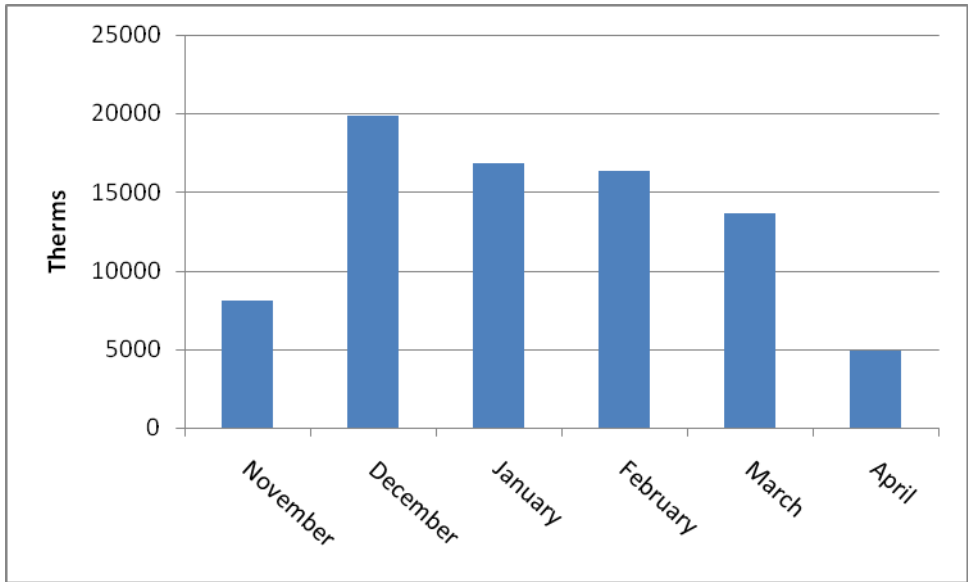
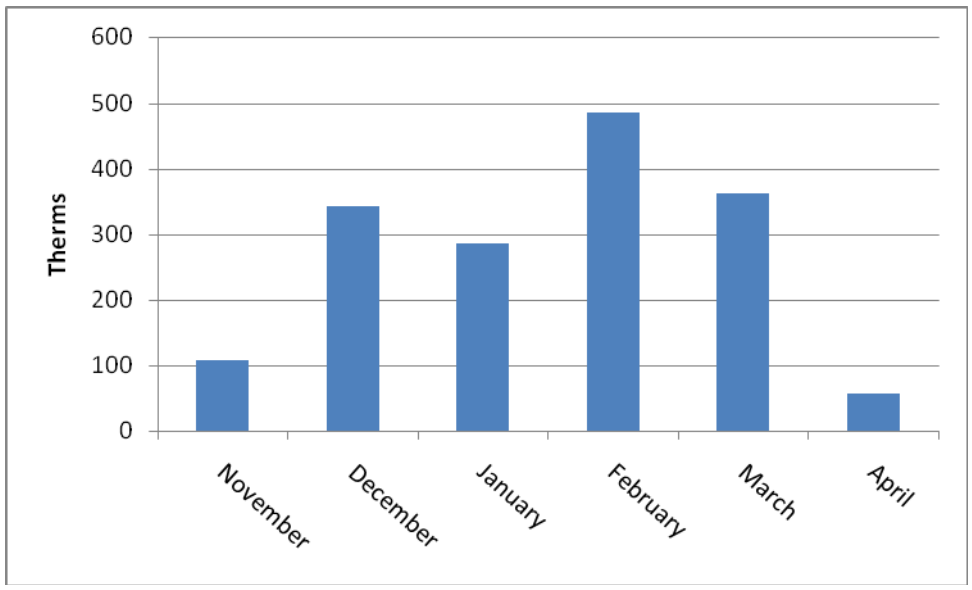


Figure 3.2-7: Voorhees High School Fuel Oil Usage (Allied Oil Account #433241)



The District is billed from Allied Oil LLC on a flat rate per gallon, as follows, in addition to a federal tax:

Account 433241: $1.619/gal of #2 fuel oil
Account 433240: $1.579/gal of #2 fuel oil
Non taxable diesel Federal tax (both accounts): $0.001/gal of #2 fuel oil

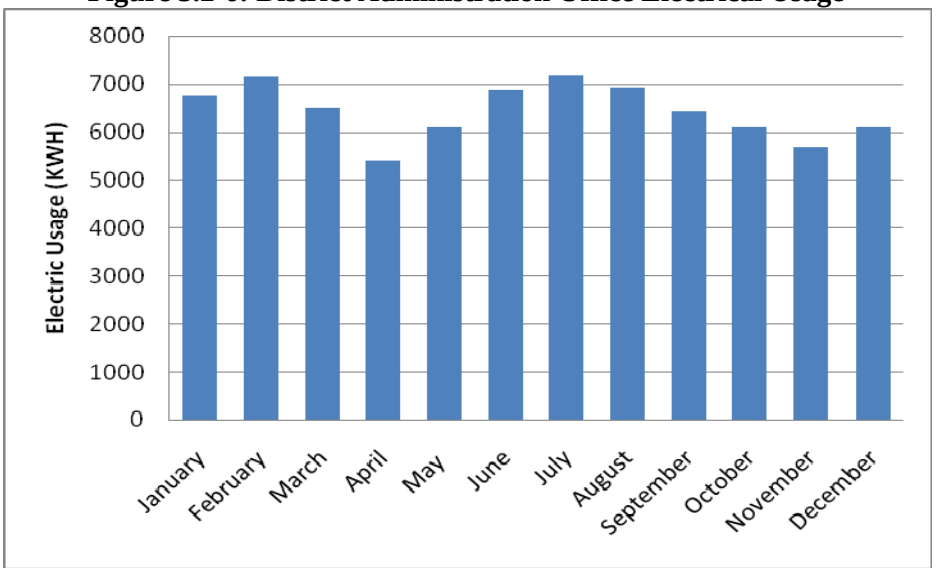
For more on the building fuel usage, refer to Section 4.2.

3.2.3 District Administration Office

Electric power for the District Administration Office is fed from a General Secondary Service lines from JCP&L. Figure 3.2-6 illustrates the office's average monthly consumption from August 2006 through April 2009. The baseline energy consumption 5,400 kWH per month.

This building is billed using a flat rate KWH charge based on JCP&L's current tariff rates. Figure 3.2-7 illustrates the average monthly demand load from August 2006 through April 2009.

Figure 3.2-6: District Administration Office Electrical Usage

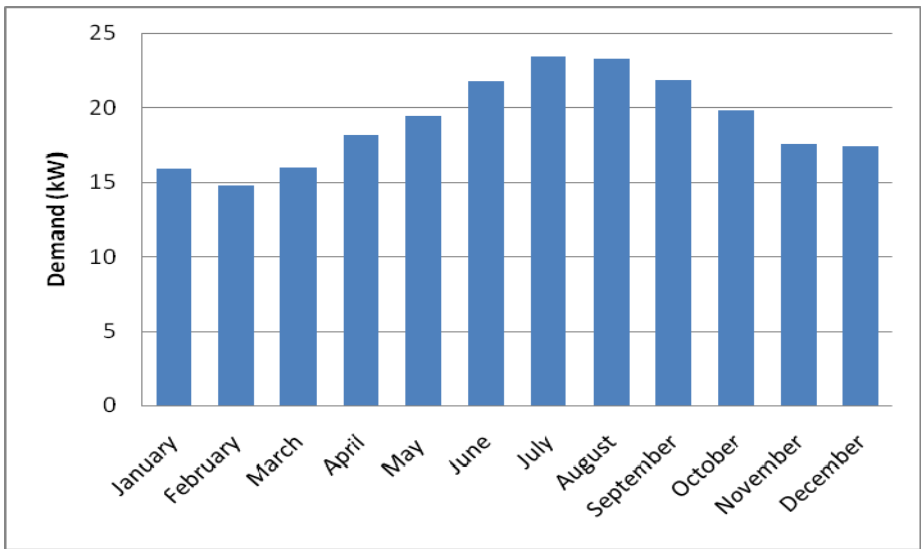


The current tariff rates for General Secondary Service from JCP&L are as follows:

Customer Charge:	$3.25	-
Basic Generation Service (BGS) Energy Charges:	$0.108803/kWH	-
BGS Transmission Charges:	$0.006435/kWH	-
Delivery Charges:	$0.057366/kWH	First 1,000 kWH
	$0.004958/kWH	Remaining kWHs
Non-Utility Generation Charges:	$0.016960/kWH	-
Societal Benefits Charges:	$0.006444/total kWH	-
Transitional Assessment Charge:	$0.002928/kWH	-
System Control Charge:	$0.000079/total kWH	-
Demand Charges:	$6.47/kW	After 10 kW

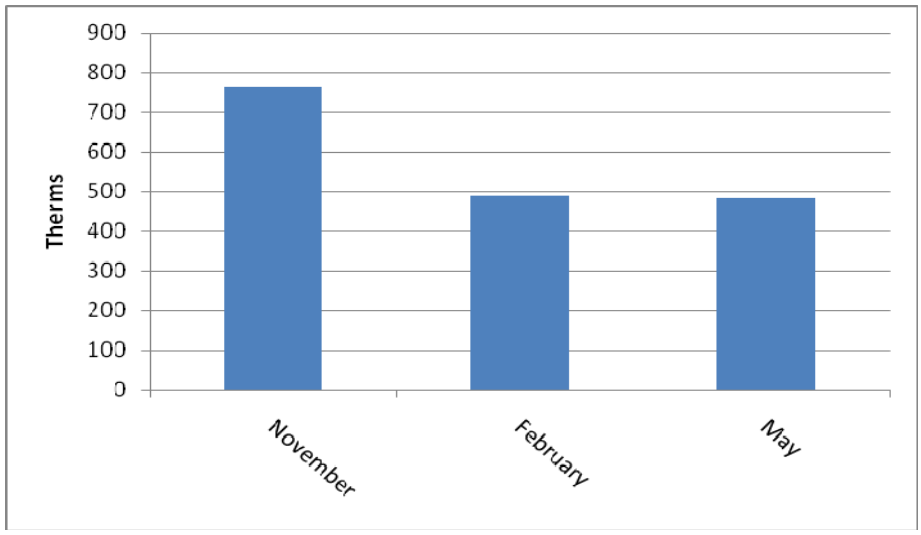
Refer to Table 3.3-1, in Section 3.3, for average electrical aggregate cost. These tariffs are subject to change quite frequently. For the most up to date tariffs, refer to JCP&L's website. Refer to Appendix A for complete Historical Data Analysis.

Figure 3.2-7: District Administration Office Maximum Monthly Demand



The building's heating system is run on fuel oil. Figure 3.2-8 illustrates the building average monthly oil deliveries during the winter of 2008.

Figure 3.2-8: District Administration Building Fuel Oil Usage



The District is billed from Allied Oil LLC on a flat rate per gallon, as follows, in addition to a federal tax:

Account 433255: $1.78 gal of #2 fuel oil
Non taxable diesel Federal tax (both accounts): $0.001/gal of #2 fuel oil

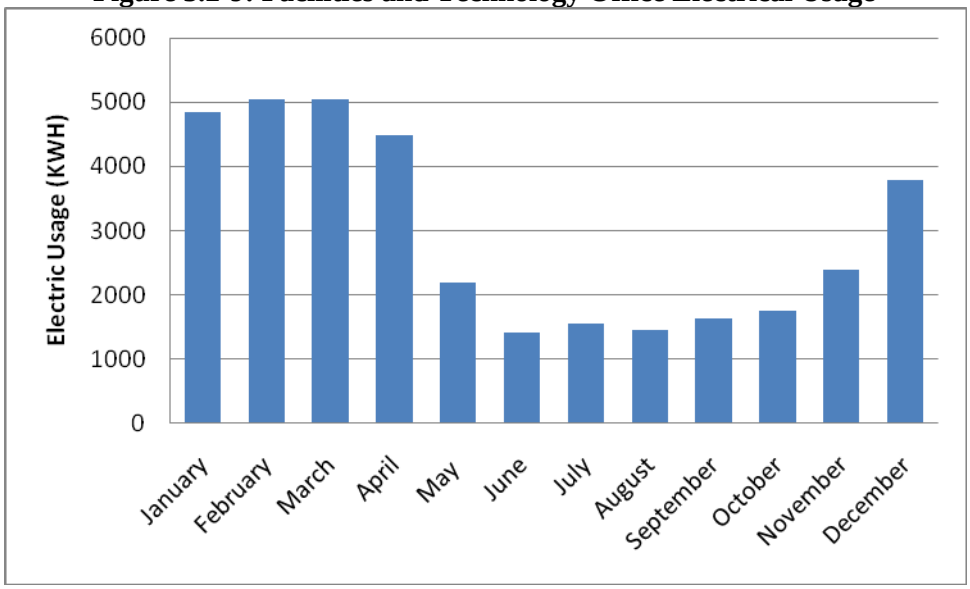
For more on the building fuel usage, refer to Section 4.2.

3.2.4 Facilities and Technology Office

Electric power for the Facilities and Technology Office is fed from one General Secondary Service line from JCP&L. Figure 3.2-9 illustrates the office's average monthly consumption from August 2006 through April 2009. The baseline electric energy consumption 1,400 kWH per month.

This building is billed using a flat rate KWH charge based on JCP&L's current tariff rates. Figure 3.2-10 illustrates the average monthly demand load from August 2006 through April 2009.

Figure 3.2-9: Facilities and Technology Office Electrical Usage

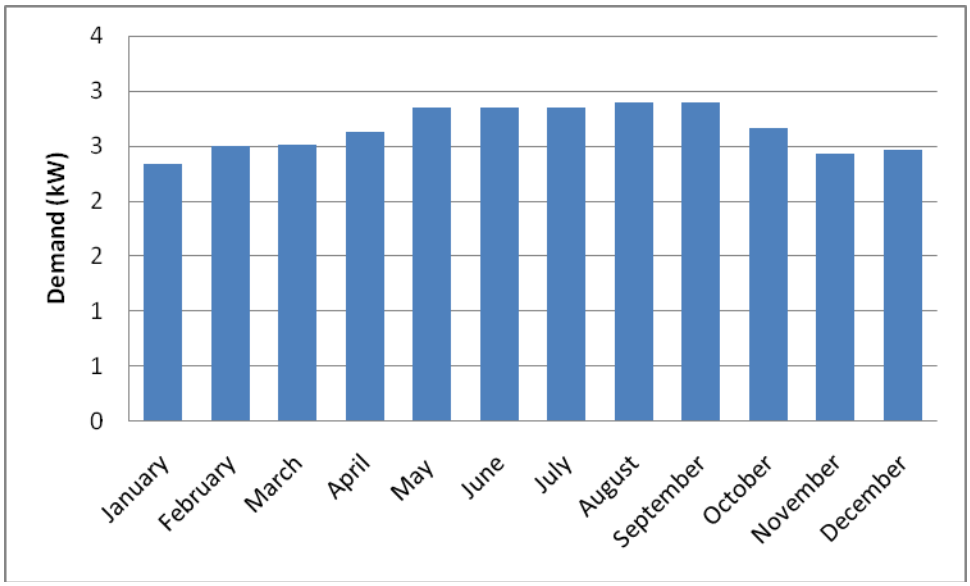


The current tariff rates for General Secondary Service from JCP&L are as follows:

Customer Charge:	$3.25	-
Basic Generation Service (BGS) Energy Charges:	$0.108803/kWH	-
BGS Transmission Charges:	$0.006435/kWH	-
Delivery Charges:	$0.057366/kWH	First 1,000 kWH
	$0.004958/kWH	Remaining kWHs
Non-Utility Generation Charges:	$0.016960/kWH	-
Societal Benefits Charges:	$0.006444/total kWH	-
Transitional Assessment Charge:	$0.002928/kWH	-
System Control Charge:	$0.000079/total kWH	-
Demand Charges:	$3.16/kW	After 10 kW

Refer to Table 3-1, in Section 3.3, for average electrical aggregate cost. These tariffs are subject to change quite frequently. For the most up to date tariffs, refer to JCP&L's website. Refer to Appendix A for complete Historical Data Analysis.

Figure 3.2-10: Facilities and Technology Office Maximum Monthly Demand



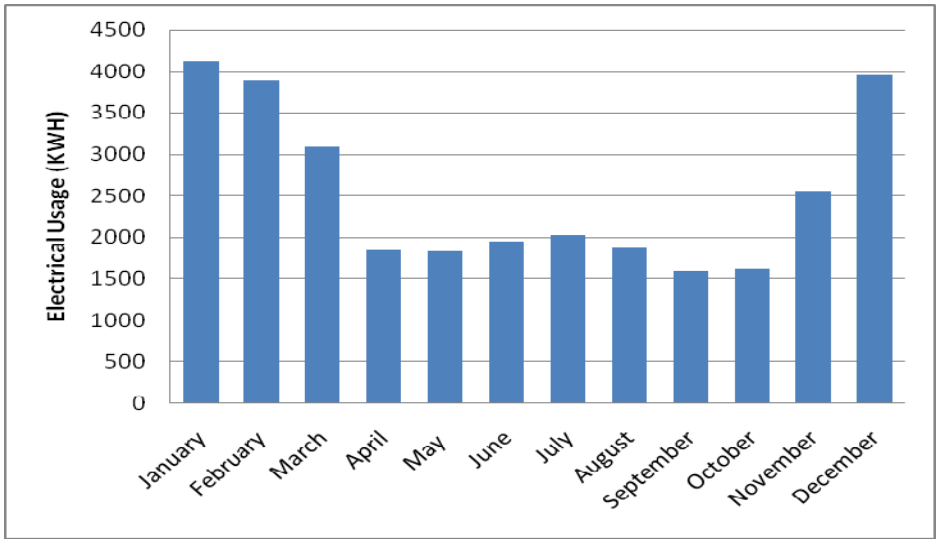
The Facility and Technology Office's heating system is electric.

3.2.5 North Hunterdon H.S. Maintenance Garage

Electric power for the North Hunterdon Maintenance Garage is fed from one General Secondary Service line from JCP&L. Figure 3.2-11 illustrates the maintenance garage's average monthly consumption from August 2006 through April 2009. The baseline electric energy consumption 1,510 kWH per month.

This building is billed using a flat rate KWH charge based on JCP&L's current tariff rates. Figure 3.2-12 illustrates the average monthly demand load from August 2006 through April 2009.

Figure 3.2-11: North Hunterdon H.S. Maintenance Garage Electrical Usage

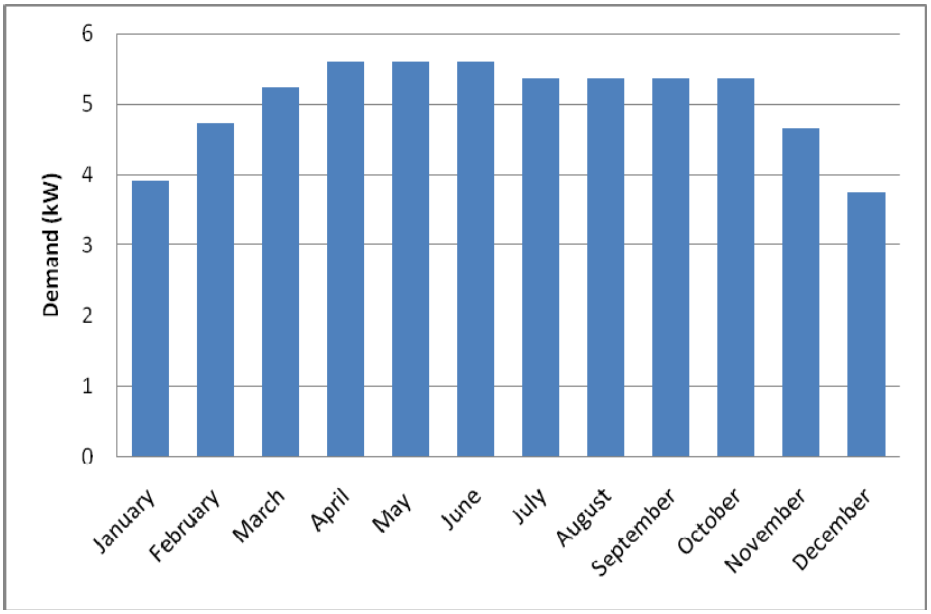


The current tariff rates for General Secondary Service from JCP&L are as follows:

Customer Charge:	$3.25	-
Basic Generation Service (BGS) Energy Charges:	$0.108803/kWH	-
BGS Transmission Charges:	$0.006435/kWH	-
Delivery Charges:	$0.057366/kWH	First 1,000 kWH
	$0.004958/kWH	Remaining kWHs
Non-Utility Generation Charges:	$0.016960/kWH	-
Societal Benefits Charges:	$0.006444/total kWH	-
Transitional Assessment Charge:	$0.002928/kWH	-
System Control Charge:	$0.000079/total kWH	-
Demand Charges:	$3.16/kW	After 10 kW

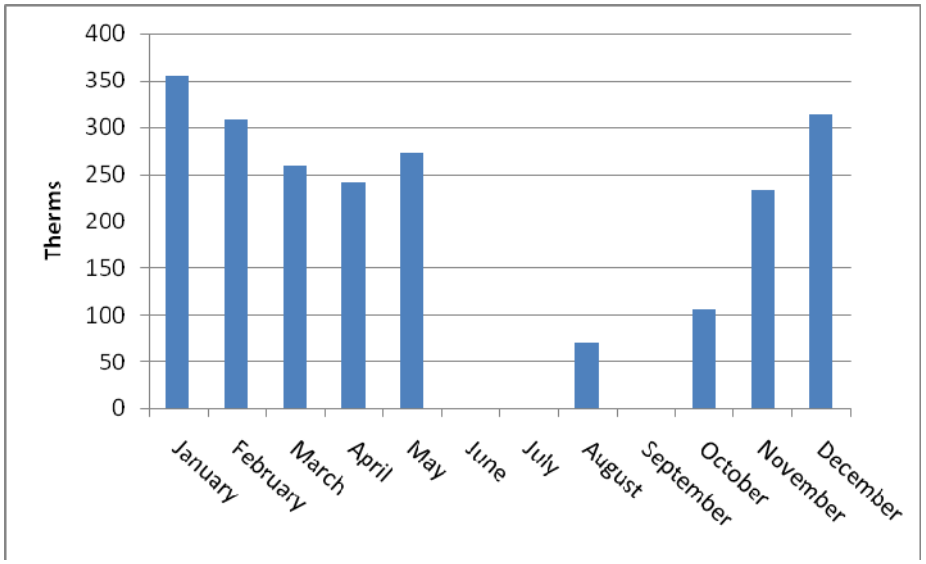
Refer to Table 3-1, in Section 3.3, for average electrical aggregate cost. These tariffs are subject to change quite frequently. For the most up to date tariffs, refer to JCP&L's website. Refer to Appendix A for complete Historical Data Analysis.

Figure 3.2-12: North Hunterdon H.S. Maintenance Garage Maximum Monthly Demand



The maintenance garage's heating system is run on propane. Figure 3.2-13 illustrates the average monthly propane deliveries from August 2006 through April 2009.

Figure 3.2-13: North Hunterdon H.S. Maintenance Garage Propane Usage



The District is billed from Amerigas on a flat rate per gallon of propane, as follows:

Commodity Charge: $2.899/gallon
Fuel Recovery Fee: $2.78
Hazmat Surcharge: $5.85

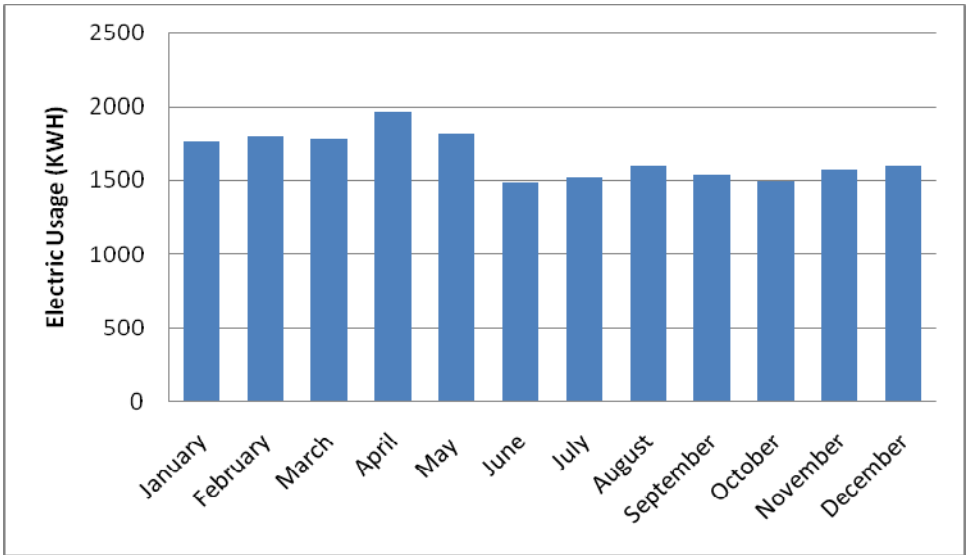
For more on building heating, refer to Section 4.2.

3.2.6 Voorhees H.S. Maintenance Garage

Electric power for the Voorhees Maintenance Garage is fed from one General Secondary Service line from JCP&L. Figure 3.2-14 illustrates the maintenance garage's average monthly consumption from August 2006 through April 2009. The baseline electric energy consumption 1,500 kWH per month.

This building is billed using a flat rate KWH charge based on JCP&L's current tariff rates. Figure 3.2-15 illustrates the average monthly demand load from August 2006 through April 2009

Figure 3.2-14: Voorhees H.S. Maintenance Garage Electrical Usage

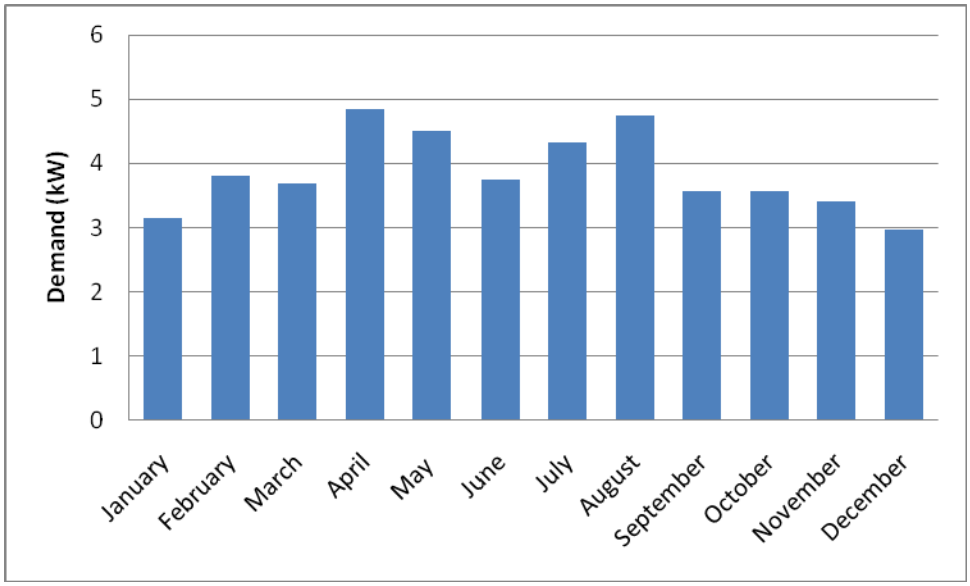


The current tariff rates for General Secondary Service from JCP&L are as follows:

Customer Charge:	$11.65	-
Basic Generation Service (BGS) Energy Charges:	$0.108803/kWH	-
BGS Transmission Charges:	$0.006435/kWH	-
Delivery Charges:	$0.057366/kWH	First 1,000 kWH
	$0.004958/kWH	Remaining kWHs
Non-Utility Generation Charges:	$0.016960/kWH	-
Societal Benefits Charges:	$0.006444/total kWH	-
Transitional Assessment Charge:	$0.002928/kWH	-
System Control Charge:	$0.000079/total kWH	-
Demand Charges:	$3.16/kW	After 10 kW

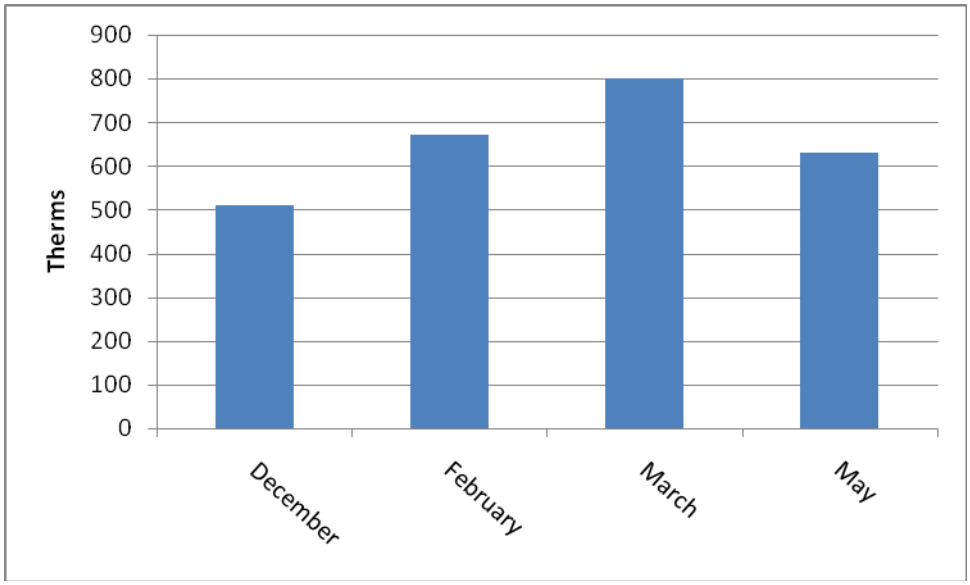
Refer to Table 3-1, in Section 3.3, for average electrical aggregate cost. These tariffs are subject to change quite frequently. For the most up to date tariffs, refer to JCP&L's website. Refer to Appendix A for complete Historical Data Analysis.

Figure 3.2-15: Voorhees H.S. Maintenance Garage Maximum Monthly Demand



The maintenance garage's heating system is run on fuel oil. Figure 3.2-16 illustrates the average monthly fuel oil deliveries the winter of 2008.

Figure 3.2-16: Voorhees H.S. Maintenance Garage Fuel Oil Usage



The District is billed from Allied Oil LLC on a flat rate per gallon, as follows, in addition to a federal tax:

Account 433256: $1.78gal of #2 fuel oil
Non taxable diesel Federal tax (both accounts): $0.001/gal of #2 fuel oil

For more on the building fuel usage, refer to Section 4.2.

3.3 Aggregate Costs

For the purposes of computing energy savings for all identified energy conservation and retrofit measures, aggregate unit costs for electrical energy and fuel, in terms of cost/kWH and cost/therm, were determined for each building and utilized in the simple payback analyses discussed in subsequent sections. The aggregate unit cost accounts for all distribution and supply charges for each location. Table 3.3-1 and Table 3.3-2 summarize the aggregate costs for electrical energy consumption and therms utilized, respectively.

Table 3.3-1: Electrical Aggregate Unit Costs

Service Location	Aggregate $ / kW-hr
North Hunterdon High School	$0.1547
Voorhees High School	$0.1477
District Administration Office	$0.2072
Facilities & Technology Office	$0.1622
N. Hunterdon Maintenance Garage	$0.2075
Voorhees Maintenance Garage	$0.1791

Table 3.3-2: Natural Gas, Fuel Oil or Propane Aggregate Unit Costs

Service Location	Aggregate $ / therm
North Hunterdon High School (natural gas)	$1.44
Voorhees High School (fuel oil)	$1.20
District Administration Building (fuel oil)	$1.24
North Hunterdon Maintenance Garage (propane)	$2.00
Voorhees Maintenance Garage (fuel oil)	$1.19

3.4 Portfolio Manager

3.4.1 Portfolio Manager Overview

Portfolio Manager is an interactive energy management tool that allows the Board of Education to track and assess energy consumption across the School District's buildings in a secure online environment. Portfolio Manager can help the Board of Education set investment priorities, verify efficiency improvements, and receive EPA recognition for superior energy performance.

3.4.2 Energy Performance Rating

For many facilities, you can rate their energy performance on a scale of 1–100 relative to similar facilities nationwide. Your facility is *not* compared to the other facilities entered into Portfolio Manager to determine your ENERGY STAR rating. Instead, statistically representative models are used to compare your facility against similar facilities from a national survey conducted by the Department of Energy's Energy Information Administration. This national survey, known as the Commercial Building Energy Consumption Survey (CBECS), is conducted every four years, and gathers data on building characteristics and energy use from thousands of facilities across the United States. Your facility's peer group of comparison is those facilities in the CBECS survey that have similar facility and operating characteristics. A rating of 50 indicates that the facility, from an energy consumption standpoint, performs better than 50% of all similar facilities nationwide, while a rating of 75 indicates that the facility performs better than 75% of all similar facilities nationwide.

K through 12 grade school buildings and office buildings are eligible to receive a rating.

3.4.3 Portfolio Manager Account Information

A Portfolio Manager account has been established for the District, which includes profiles for the North Hunterdon High School, the Voorhees High School, the District's Administration Office and the Facilities & Technology Office. Information entered into these two (2) Portfolio Manager building profiles, including electrical energy consumption, natural gas consumption and water usage may be used to apply for an Energy Star rating with the USEPA.

At the time of this report, only the North Hunterdon High School received the below rating. The other buildings did not receive a rating for the following reasons:

North Hunterdon H.S. – 43
Voorhees H.S. - < 1 year of fuel oil usage
District Admin Office - < 1 year of fuel oil usage
F&T Office – no rating, but a statement of energy performance was included

A Statement of Energy Performance report for the North Hunterdon High School and Facilities & Technology Office was generated through Portfolio Manager and included in Appendix B, along with a Portfolio Manager reference sheet.

In order to qualify for an energy star rating, utility data must be current. Therefore, as the District takes possession of this account, it is important to keep it updated with the latest utility bill data. When there is a full year of consecutive utility usage entered under each profile, a rating will be assigned. Also, as a result of the District's commitment to implementing energy efficiency improvements, the building ratings may improve to be 75 or more, warranting an Energy Star label.

The following website link, username and password shall be used to access the Portfolio Manager account and building profiles that has been established for the District:

https://www.energystar.gov/istar/pmpam/

USERNAME: NHV

PASSWORD: energystar

Section 4
Energy Conservation and Retrofit Measures (ECRM)

4.1 Building Lighting Systems

The goal of this section is to present any lighting energy conservation measures that may also be cost beneficial. It should be noted that replacing current bulbs with more energy-efficient equivalents will have a small effect on the building heating and cooling loads. The building cooling load will see a small decrease from an upgrade to more efficient bulbs and the heating load will see a small increase, as the more energy efficient bulbs give off less heat.

Please note that the probable construction costs presented herein are estimates based on historic data compiled from similar installations and engineering opinions. Additional engineering will be required for each measure identified in this report and final scope of work and budget cost estimates will need to be confirmed prior to the coordination of project financing or the issuance of a Request for Proposal.

4.1.1 North Hunterdon High School

It is recommended that the existing lighting system at the North Hunterdon High School, which consists of T-12 and T-8 fixtures, metal halide, and incandescent fixtures, as discussed in Section 2.1.2, be upgraded to high efficiency standards to create lighting uniformity throughout the buildings. Limited ECRM's can be applied to the existing system, because the school has recently performed a T-8 upgrade on a majority of the lighting in the high school building. In general, the recommended lighting upgrade project, as presented in Appendix D, involves installing energy-efficient lighting retrofit kits, electronic ballasts, and new energy-efficient luminaires to the existing lighting systems. The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. In addition, it is recommended to install occupancy sensors in specified areas of the facility. Please refer to Appendix D: Lighting Retrofit Spreadsheets for a line-by-line proposed detailed lighting upgrades.

The annual energy savings are estimated to be 43.3kW, 109,300 kWh and $21,861. The following table, Table 4.1-1, summarizes a simple payback analysis assuming the implementation of all recommended lighting system improvements at the North Hunterdon High School. Included in this simplified payback analysis summary table is a 'Return on Investment' (ROI) values. This value is a performance measure used to evaluate the efficiency of an investment and is calculated by dividing the 'return' or savings associated with an investment by the total investment cost. ROI values are calculated by dividing the annual energy savings by the retrofit cost after incentives. ROI ratings can be utilized to prioritize the implementation of energy savings measures.

Table 4.1-1 **North Hunterdon High School Lighting System Improvements**	
New & Retrofit Cost (Material and Labor)	$ 58,651
New Jersey SmartStart Rebate	-$9,690
Total Cost	$48,961
Annual Energy Savings	$21,860
Simple Payback	**2.3 years**
Return on Investment (ROI)	**45%**

It should be noted that the Lighting Annual Savings assume the annual hours per year of operation as outlined under the columns entitled "Proposed Operational Hours" and "Proposed Operational Hours with Sensors" in Appendix D.

4.1.2 Voorhees High School

It is recommended that the existing lighting system at the Voorhees High School, which consists of T-12 and T-8 fixtures and incandescent lighting, as discussed in Section 2.1.2, be upgraded to high efficiency standards to create lighting uniformity throughout the buildings. Limited ECRM's can be applied to the existing system, because the school has recently performed a T-8 upgrade on a majority of the lighting in the high school building. In general, the recommended lighting upgrade project, as presented in Appendix D, involves installing energy-efficient lighting retrofit kits, electronic ballasts, and new energy-efficient luminaires to the existing lighting systems. The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. In addition, it is recommended to install occupancy sensors in specified areas of the facility. Please refer to Appendix D: Lighting Retrofit Spreadsheets for a line-by-line proposed detailed lighting upgrades.

The annual energy savings are estimated to be 51.2 kW, 140,778 kWh and $28,156. The following table, Table 4.1-2, summarizes a simple payback analysis assuming the implementation of all recommended lighting system improvements at the Voorhees High School:

Table 4.1-2 Voorhees High School Lighting System Improvements	
Retrofit Cost (Material and Labor)	$32,736
New Jersey SmartStart Rebate	-$9,010
Total Cost	$23,726
Annual Energy Savings	$28,156
Simple Payback	**0.9 years**
ROI	**119%**

It should be noted that the Lighting Annual Savings assume the annual hours per year of operation as outlined under the columns entitled "Proposed Operational Hours" and "Proposed Operational Hours with Sensors" in Appendix D.

4.1.3 District Administration Building

It is recommended that the existing lighting system at the North Hunterdon High School District Administration Building, which consists of T-12 and T-8 fixtures, as discussed in Section 2.1.2, be upgraded to high efficiency standards to create lighting uniformity throughout the buildings. In general, the recommended lighting upgrade project, as presented in Appendix D, involves installing energy-efficient lighting retrofit kits, electronic ballasts, and new energy-efficient luminaires to the existing lighting systems. The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. In addition, it is recommended to install occupancy sensors in specified areas of the facility. Please refer to Appendix D: Lighting Retrofit Spreadsheets for a line-by-line proposed detailed lighting upgrades.

The annual energy savings are estimated to be 3.8 kW, 9,040 kWh and $1,808. The following table, Table 4.1-3, summarizes a simple payback analysis assuming the implementation of all recommended lighting system improvements at the North Hunterdon High School District Administration Building:

Table 4.1-3 **North Hunterdon High School District Administration Building Lighting System Improvements**	
Retrofit Cost (Material and Labor)	$10,895
New Jersey SmartStart Rebate	-$3,720
Total Cost	$7,175
Annual Energy Savings	$1,808
Simple Payback	**4.0 years**
ROI	**25%**

It should be noted that the Lighting Annual Savings assume the annual hours per year of operation as outlined under the columns entitled "Proposed Operational Hours" and "Proposed Operational Hours with Sensors" in Appendix D.

4.1.4 North Hunterdon - Facilities/Technologies Office

It is recommended that the existing lighting system at the North Hunterdon High School, which consists of T-12 and T-8 fixtures and incandescent lighting, as discussed in Section 2.1.2, be upgraded to high efficiency standards to create lighting uniformity throughout the buildings. In general, the recommended lighting upgrade project, as presented in Appendix D, involves installing energy-efficient lighting retrofit kits, electronic ballasts, and new energy-efficient luminaires to the existing lighting systems. The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. In addition, it is recommended to install occupancy sensors in specified areas of the facility. Please refer to Appendix D: Lighting Retrofit Spreadsheets for a line-by-line proposed detailed lighting upgrades.

The annual energy savings are estimated to be 0.5 kW, 1081 kWh and $1,275. The following table, Table 4.1-4, summarizes a simple payback analysis assuming the implementation of all recommended lighting system improvements at the North Hunterdon – Facilities/Technology Office:

Table 4.1-4 **North Hunterdon High School Facilities/Technology Office Lighting System Improvements**	
Retrofit Cost (Material and Labor)	$1,275
New Jersey SmartStart Rebate	-$300
Total Cost	$975
Annual Energy Savings	$216
Simple Payback	**4.5 years**
ROI	**22%**

It should be noted that the Lighting Annual Savings assume the annual hours per year of operation as outlined under the columns entitled "Proposed Operational Hours" and "Proposed Operational Hours with Sensors" in Appendix D.

4.1.5 North Hunterdon - Maintenance Garage

It is recommended that the existing lighting system at the North Hunterdon High School Maintenance Garage, which consists of T-12 and T-8 fixtures and incandescent lighting, as discussed in Section 2.1.2, be upgraded to high efficiency standards to create lighting uniformity throughout the buildings. In general, the recommended lighting upgrade project, as presented in Appendix D, involves installing energy-efficient lighting retrofit kits, electronic ballasts, and new energy-efficient luminaires to the existing lighting systems. The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. In addition, it is recommended to install occupancy sensors in specified areas of the facility. Please refer to Appendix D: Lighting Retrofit Spreadsheets for a line-by-line proposed detailed lighting upgrades.

The annual energy savings are estimated to be 1.6 kW, 6,485 kWh and $1,297. The following table, Table 4.1-5, summarizes a simple payback analysis assuming the implementation of all recommended lighting system improvements at the North Hunterdon High School Maintenance Garage:

Table 4.1-5 **North Hunterdon High School Maintenance Garage** **Lighting System Improvements**	
Retrofit Cost (Material and Labor)	$2,968
New Jersey SmartStart Rebate	$-875
Total Cost	$2,093
Annual Energy Savings	$1,297
Simple Payback	**1.6 years**
ROI	**62%**

It should be noted that the Lighting Annual Savings assume the annual hours per year of operation as outlined under the columns entitled "Proposed Operational Hours" and "Proposed Operational Hours with Sensors" in Appendix D.

4.1.6 Voorhees - Maintenance Garage

It is recommended that the existing lighting system at the North Hunterdon High School, which consists of T-12 and T-8 fixtures and incandescent lighting, as discussed in Section 2.1.2, be upgraded to high efficiency standards to create lighting uniformity throughout the buildings. Limited ECRM's can be applied to the existing system, because the school has recently performed a T-8 upgrade on a majority of the lighting in the high school building. In general, the recommended lighting upgrade project, as presented in Appendix D, involves installing energy-efficient lighting retrofit kits, electronic ballasts, and new energy-efficient luminaires to the existing lighting systems. The strategies included in this section focus on maximizing energy savings and maintaining or exceeding existing lighting levels, while also maintaining the existing look of each fixture; therefore, proposed lamp styles remain consistent with existing lamp styles. In addition, it is recommended to install occupancy sensors in specified areas of the facility. Please refer to Appendix D: Lighting Retrofit Spreadsheets for a line-by-line proposed detailed lighting upgrades.

The annual energy savings are estimated to be 0.4 kW, 3,904 kWh and $781. The following table, Table 4.1-6, summarizes a simple payback analysis assuming the implementation of all recommended lighting system improvements at the Voorhees High School Maintenance Garage:

Table 4.1-6 Voorhees High School Maintenance Garage Lighting System Improvements	
Retrofit Cost (Material and Labor)	$577.5
New Jersey SmartStart Rebate	-$155.0
Total Cost	$422.5
Annual Energy Savings	$780.8
Simple Payback	**0.7 years**
ROI	**185%**

It should be noted that the Lighting Annual Savings assume the annual hours per year of operation as outlined under the columns entitled "Proposed Operational Hours" and "Proposed Operational Hours with Sensors" in Appendix D.

4.2 HVAC Systems

The goal of this section is to present any heating and cooling energy reduction and cost saving measures that may also be cost beneficial. Where possible, measures will be presented with a life-cycle cost analysis. This analysis displays a payback period based on weighing the capital cost of the measure against predicted annual fiscal savings. To do this, the buildings have been modeled as accurately as possible to predict energy usage for space heating and cooling, as well as domestic hot water use.

Each building is modeled using software called eQuest, a Department of Energy-sponsored energy modeling program, to establish a baseline space heating and cooling energy usage. Climate data from Newark, NJ was used for analysis. From this, the model may be calibrated, using historical utility bills, to predict the impact of theoretical energy savings measures. Refer to Appendix C for model run summaries.

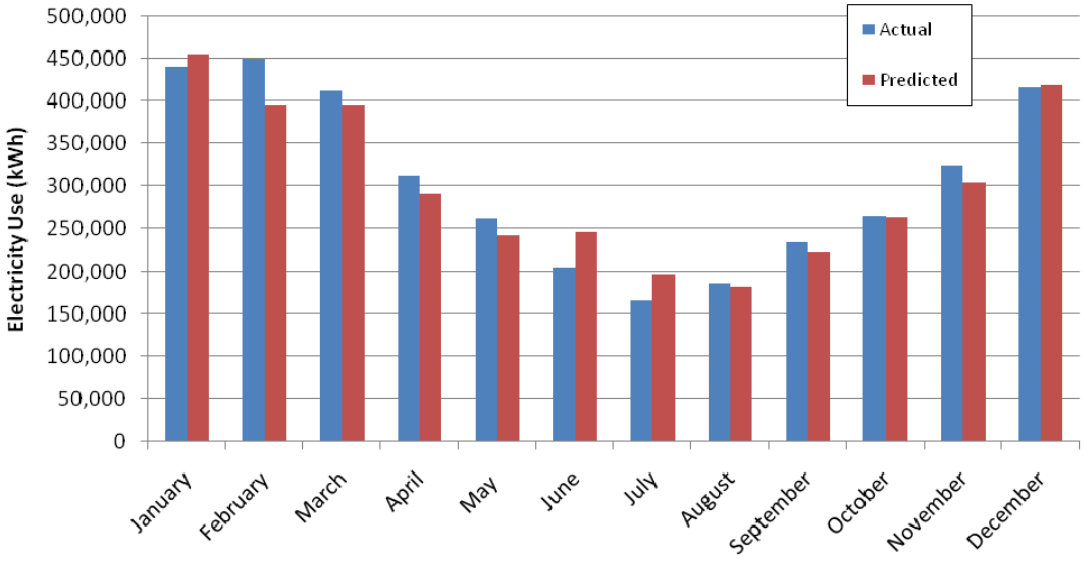
Once annual energy savings from a particular measure have been predicted and the initial capital cost has been estimated, payback periods may be approximated. Equipment cost estimate calculations are provided in Appendix H.

4.2.1 North Hunterdon High School

A model of the North Hunterdon High School was created in eQuest to predict heating and cooling loads for the building. To calibrate this model, CDM used electricity bills from 2006 through 2008, and natural gas bills from 2007 through 2008. Usages for each month during these years were averaged. For example, usage during the month of January was averaged for the three years, to yield an approximate average electricity usage during the month of January. The same was done for all

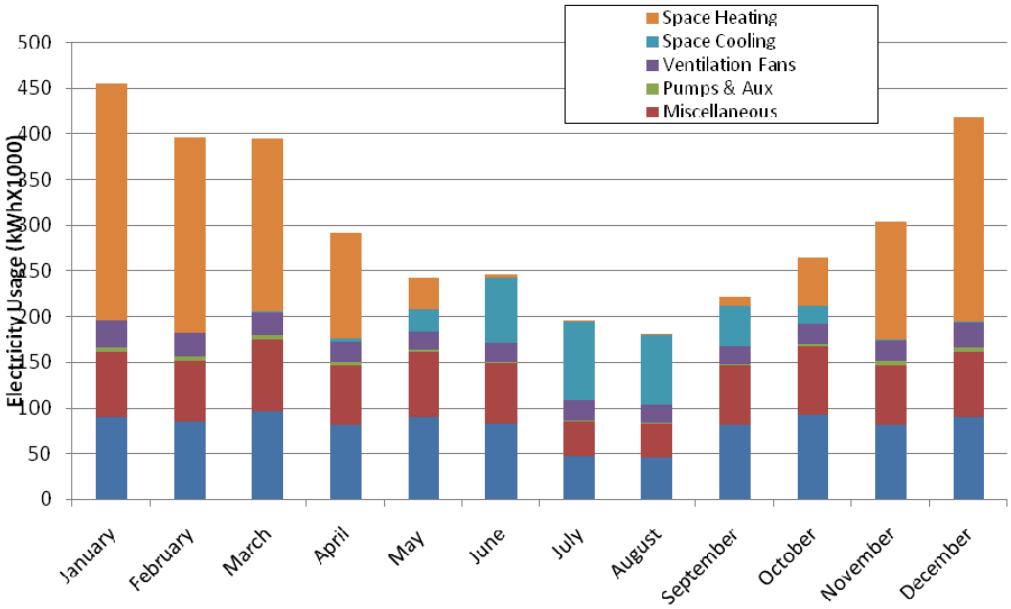
twelve months. Figure 4.2-1 below compares actual average monthly electricity usages, with those predicted by the eQuest model.

Figure 4.2-1: North Hunterdon Electricity Usage



Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and cooling. It should be noted that these are only approximate usages based on information gathered during CDM's field audit. Figure 4.2-2 presents this information to help the District visualize where the electricity is ultimately being used.

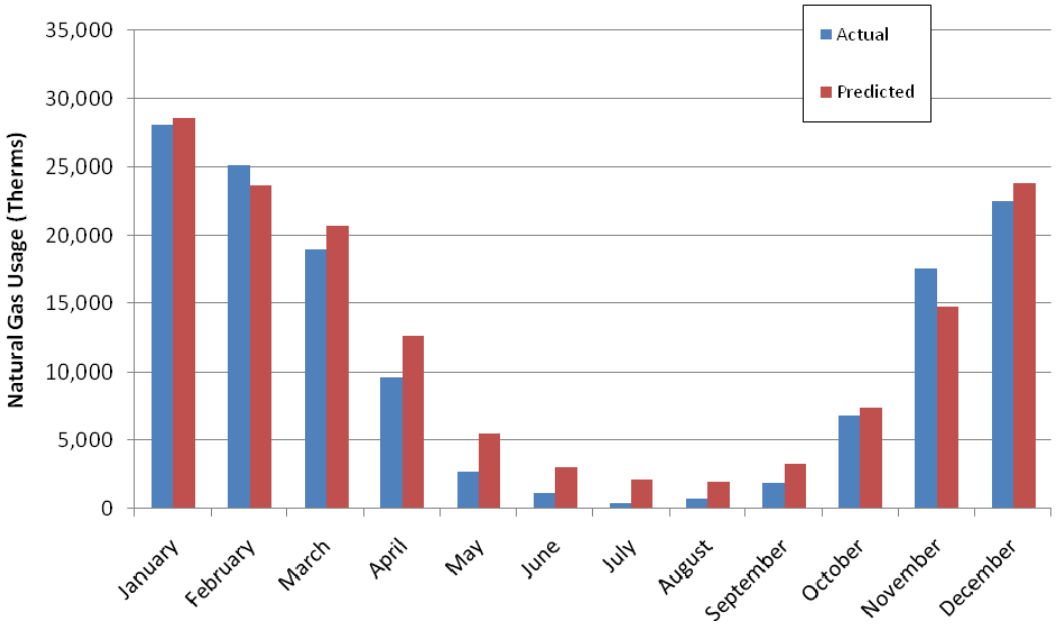
Figure 4.2-2: North Hunterdon Electricity Usage Breakdown



Usage data presented above is for information purposes only, as CDM found no significant electricity usage reduction measures related to HVAC equipment.

Figure 4.2-3 below compares actual natural gas usage to model-predicted natural gas use, to demonstrate the accuracy of the model.

Figure 4.2-3: North Hunterdon Natural Gas Usage



It may be seen that the model-predicted natural gas usage was a bit high during the warmer months. CDM was informed that during warmer months, the boilers are operated for approximately one hour just to "charge" the system with steam, and then remain off for the rest of the day. The software eQuest is not capable of modeling steam systems. Instead, these systems are modeled as hot water systems, with steam boilers. As a hot water system cannot be "charged" like a steam system can, the model is assuming the boilers are operating as needed to heat the space throughout the day. This is likely the reason that the predicted gas usage during the warm months is a bit high.

North Hunterdon High School operates on a number of heating systems. Steam and electricity are primarily used to heat the older sections of the school. The terminal units for these systems are unit ventilators. As unit ventilators are small, packaged, single zone units, they have very limited options for energy conservation measures. Therefore, CDM has no recommendations for these systems. However, replacing some of the aging unit ventilators will help to ensure that they are operating at rated efficiencies.

The newer sections of the building utilize gas-fired rooftop units. Due to the fact that these units are less than 10 years old, they are likely operating at or near rated efficiencies. Replacing these units would not prove beneficial.

Over several decades, ASHRAE has compiled data pertaining to service lives of most HVAC related equipment. From this, ASHRAE indicates a median service life (life

until replacement) for HVAC related equipment that may be used as an estimate for the useful life of HVAC equipment currently in service. For example, ASHRAE indicates a window air conditioning unit has a median service life of 10 years. Therefore, if a window unit has been in service for more than 10 years, the owner may want to consider replacement. Not only will a replacement ensure minimal downtime between units (the unit is replaced before it ceases to function), but it will also maintain rated system efficiency, as efficiency tends to decrease with age.

All major equipment noted during CDM's on site audit is listed in Table 4.2-1 below, along with estimated current ages and ASHRAE-expected service lives. It should be noted that only equipment that was observed at the time of the audit is included. Where equipment ages were not found on the equipment tags, they have been estimated based on the unit appearance or approximate renovation dates.

Table 4.2-1
North Hunterdon High School HVAC Equipment Service Lives

Description	Tag	Service Location	Manufacturer	Model	Estimated Age (Years)	ASHRAE Expected Life (Years)
Roof-top Unit	RT-1	252	Trane	YCH060A	<10	15
Roof-top Unit	RT-2	251	Trane	YCH060A	<10	15
Roof-top Unit	RT-3	250	Trane	YCH060A	<10	15
Roof-top Unit	RT-4	2nd floor common	Trane	YCH048A	<10	15
Roof-top Unit	RT-5	253	Trane	YCH060A	<10	15
Roof-top Unit	RT-6	254	Trane	YCH060A	<10	15
Roof-top Unit	RT-7	S-153	Trane	YCH048A	<10	15
Roof-top Unit	RT-8	S-154	Trane	YCH048A	<10	15
Roof-top Unit	RT-9	155	Trane	YCH048A	<10	15
Roof-top Unit	RT-10	156	Trane	YCH048A	<10	15
Roof-top Unit	RT-11	152	Trane	YCH048A	<10	15
Roof-top Unit	RT-12	150	Trane	YCH048A	<10	15
Roof-top Unit	RT-13	1ST floor common (hall)	Trane	YCH060A	<10	15
Roof-top Unit	RT-14	250 A	Trane	YCH060A	<10	15
Roof-top Unit	RT-15	151	Trane	YCH048A	<10	15
Roof-top Unit	RT-16	229 A/B	Trane	YCH060A	<10	15
Roof-top Unit	RT-17	229	Trane	YCH072A	<10	15

Table 4.2-1 North Hunterdon High School HVAC Equipment Service Lives						
Roof-top Unit	RT-18	Faculty (mail room)	Trane	YCH060A	<10	15
Roof-top Unit	RT-20	Gym	Trane	YCH600A	<10	15
Roof-top Unit	RT-21	Gym	Trane	YCH600A	<10	15
Roof-top Unit	RT-22	Trainers Room	Trane	YCH060A	<10	15
Roof-top Unit	RT-23	Girls Locker Room	Trane	YCH060A	<10	15
Roof-top Unit	RT-24	Weight Room North	Trane	YCH048A	<10	15
Roof-top Unit	RT-25		Trane	YCH048A	<10	15
Roof-top Unit	RT-26	New Gym	Trane	YCH072A	<10	15
Roof-top Unit	RT-27	241	Trane	YCH060A	<10	15
Roof-top Unit	RT-28	243	Trane	YCH060A	<10	15
Roof-top Unit	RT-29	245	Trane	YCH048A	<10	15
Roof-top Unit	RT-30	TV 130	Trane	YCH092A	<10	15
Roof-top Unit	RT-31	TV 130	Trane	YCH092A	<10	15
Boiler		"1950 Section"	Burnham	V1117	3	25
Boiler		"1950 Section"	Burnham	V1117	3	25
Boiler		"1957 Section"	Cleaver Brooks	C500-200	**42**	35
Boiler		"1957 Section"	Cleaver Brooks	C500-200	**42**	35

4.2.2 Voorhees High School

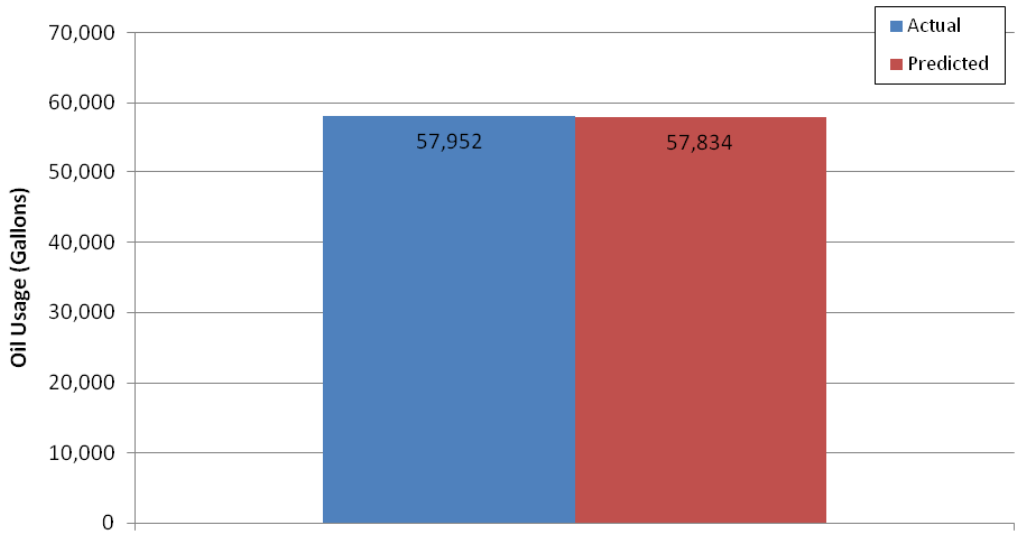
A model of the Voorhees High School was created in eQuest to predict heating and cooling loads for the building.

Heating for the school is provided by oil-fired boilers. Due to the nature of fuel oil systems, it is difficult to assess monthly usages. Delivered quantities of fuel oil do not necessarily reflect actual usage between deliveries. Therefore, CDM has calibrated the school model based on the total annual fuel oil delivered.

CDM was provided with fuel oil delivery information from November, 2008 through April, 2009. During this timeframe 57,952 gallons of fuel oil were delivered. As the bulk of the fuel oil would be consumed during the heating season (between September and April), CDM assumes that this reflects an approximate total annual fuel oil usage. Based on this assumption, the eQuest model was calibrated. Figure 4.2-

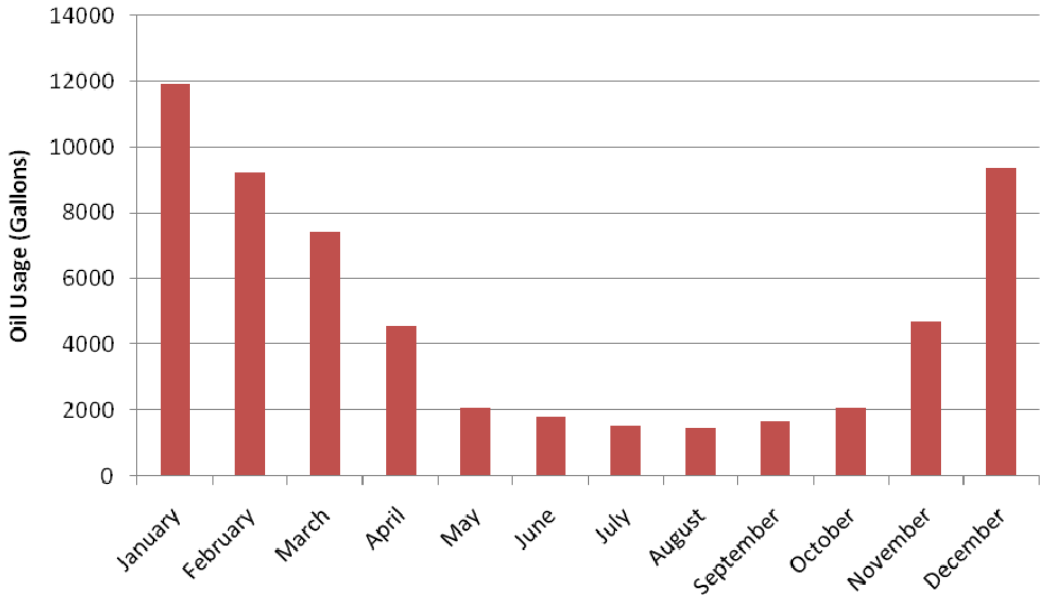
4 below displays a comparison between the actual fuel oil usage, and the eQuest model-predicted annual fuel oil usage (assuming one gallon of fuel oil contributes 138,500 BTU of heating energy).

Figure 4.2-4: Voorhees High School Annual Fuel Oil Usage



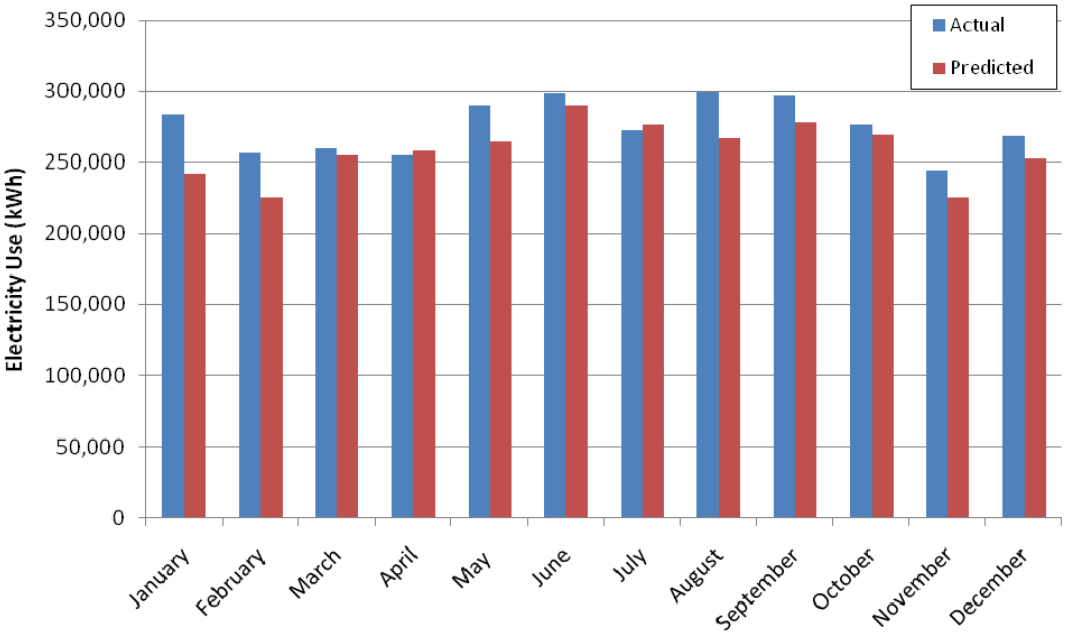
With the eQuest model predicting a reasonably accurate annual fuel oil usage, it can be broken into predicted monthly usages, as seen in Figure 4.2-5 below.

Figure 4.2-5: Voorhees High School Monthly Fuel Oil Usage



Additionally, the eQuest model is calibrated to reflect approximate annual electricity usage. CDM received utility bills for the three year period 2006 through 2008. Electricity consumption was averaged for each month to give a three year average monthly usage. Figure 4.2-6 below compares the actual average monthly usages with the eQuest model-predicted monthly usages.

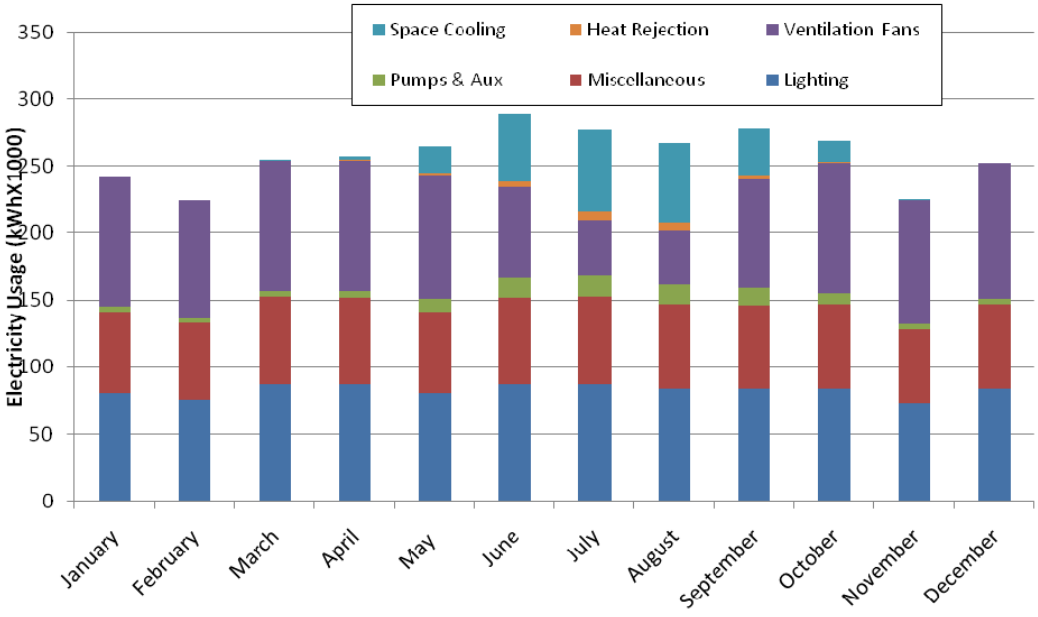
Figure 4.2-6: Voorhees High School Electricity Usage



Once the eQuest model was calibrated, it could be used to predict approximate major usage categories, such as lighting, plug loads (miscellaneous), ventilation, and

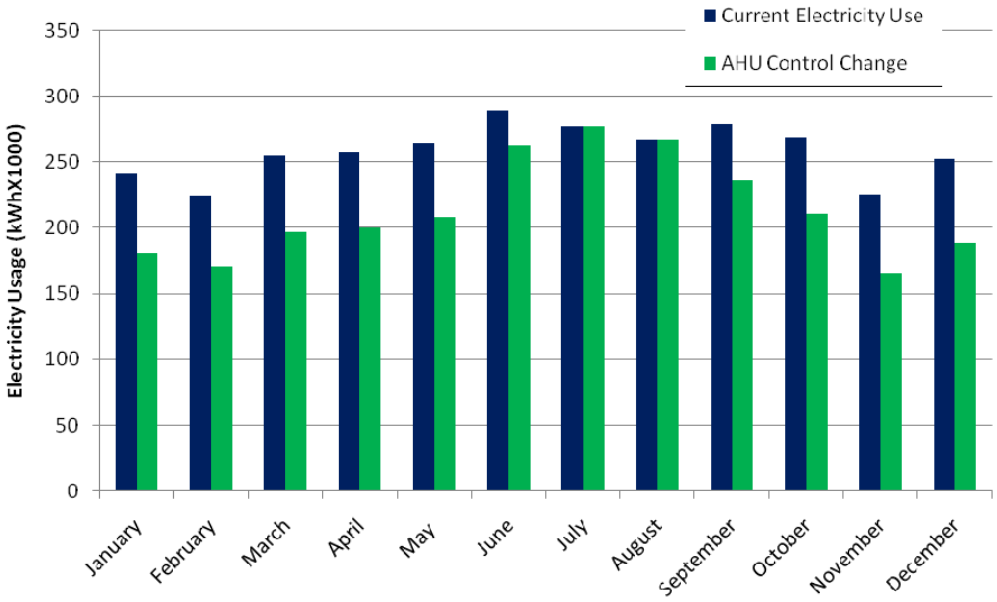
cooling. Figure 4.2-7 shows an approximate electricity usage breakdown. It should be noted that these are only approximate usages based on information gathered during CDM's field audit.

Figure 4.2-7: Voorhees High School Electricity Usage Breakdown



During the field audit, CDM was informed that the air handling equipment operates 24 hours a day during the school year, with a reduced schedule during the summer. This is apparently due to indoor air quality complaints that arose from operating the air handling units on a fixed, daytime-only schedule. Operating the air handling units between the hours of 4 PM and 7 AM, when the building is mostly unoccupied, can be a significant waste of energy. Figure 4.2-8 compares current electricity usage with approximate electricity usage if the fans only operated between 7AM and 4PM.

Figure 4.2-8: Voorhees High School – AHU Control Change Electricity Usage



Additionally, this type of control change will lessen the burden to keep the school conditioned while it is unoccupied, resulting in significant fuel oil savings. Figure 4.2-9 below demonstrates the approximate fuel oil savings from such a change.

Figure 4.2-9: Voorhees High School – AHU Control Change Fuel Oil Usage

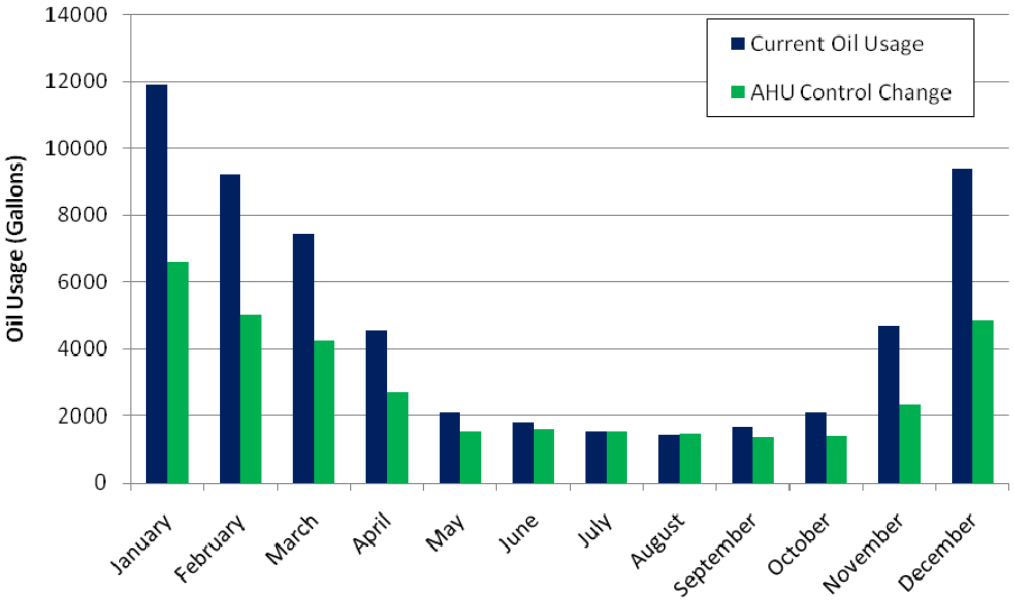


Table 4.2-2 below indicates an approximate fiscal savings, as well as payback period for such a change. The cost estimate spreadsheet may be found in Appendix H.

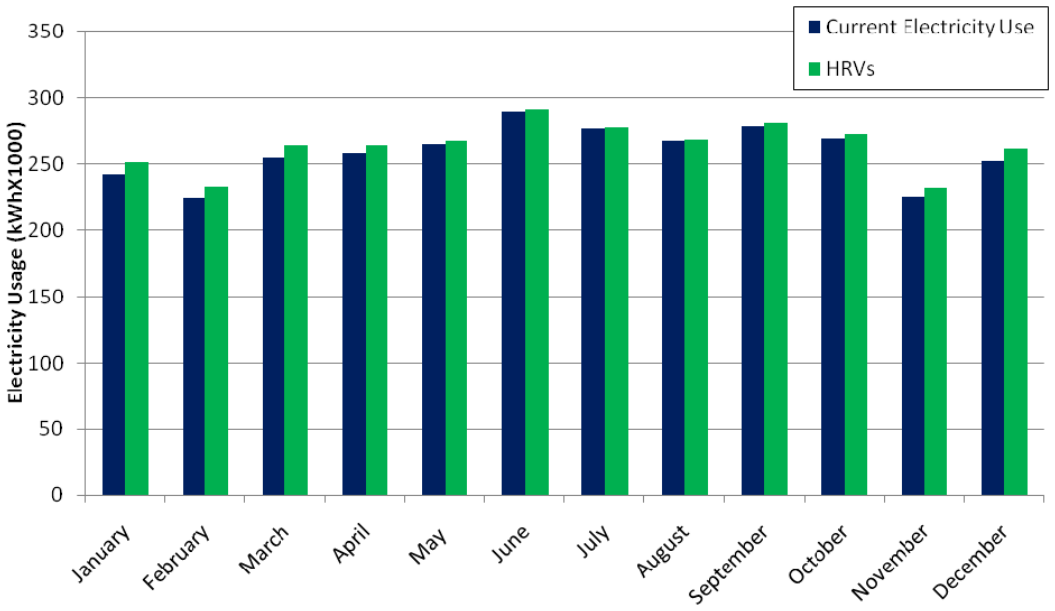
Table 4.2-2 – Voorhees High School AHU Control Change	
Predicted Annual Electricity Savings (kWh)	540,800
Total Annual Electricity Savings (Fiscal)	$79,876
Predicted Annual Fuel Oil Savings (Gallons)	23,196
Total Annual Fuel Oil Savings (Fiscal)	$38,552
Initial Capital Cost of Upgrade	$4,698
Incentives	$0
Capital Cost of Upgrade	$4,698
Simple Payback	**0.1**
ROI	**25%**

Based on the significant fiscal savings of such a change, CDM recommends operating the air handling units between the hours of 7 AM and 4 PM. If indoor air quality continues to be a concern, the District may consider having it tested. If testing yields evidence of a lingering air quality issue after such a change, perhaps rebalancing the air handling units to increase outdoor air supply would be an option. This will increase outdoor air ventilation to the classrooms, effectively improving air quality, while still granting the option to only run the units while the building is occupied.

Another method of savings which may be considered is to add heat recovery ventilators (HRVs) with enthalpy wheels to the nineteen major air handlers at the school. These wheels capture heat from air being exhausted from the space, and transfer it to air being supplied to the space. This results in fuel oil savings, as a portion of the heat is "recycled". However, these wheels will increase the resistance to ducted air flow, resulting in an increased static pressure drop to overcome by the unit. Consequently, the electricity required to operate the ventilation fans increases slightly.

Figure 4.2-10 below demonstrates the increased electricity requirement to operate HRVs in the major air handling units.

Figure 4.2-10: Voorhees High School – HRVs Electricity Usage



It can be seen that the increased electrical burden is minor when compared to the fuel oil savings demonstrated in Figure 4.2-11 below.

Figure 4.2-11: Voorhees High School – HRVs Fuel Oil Usage

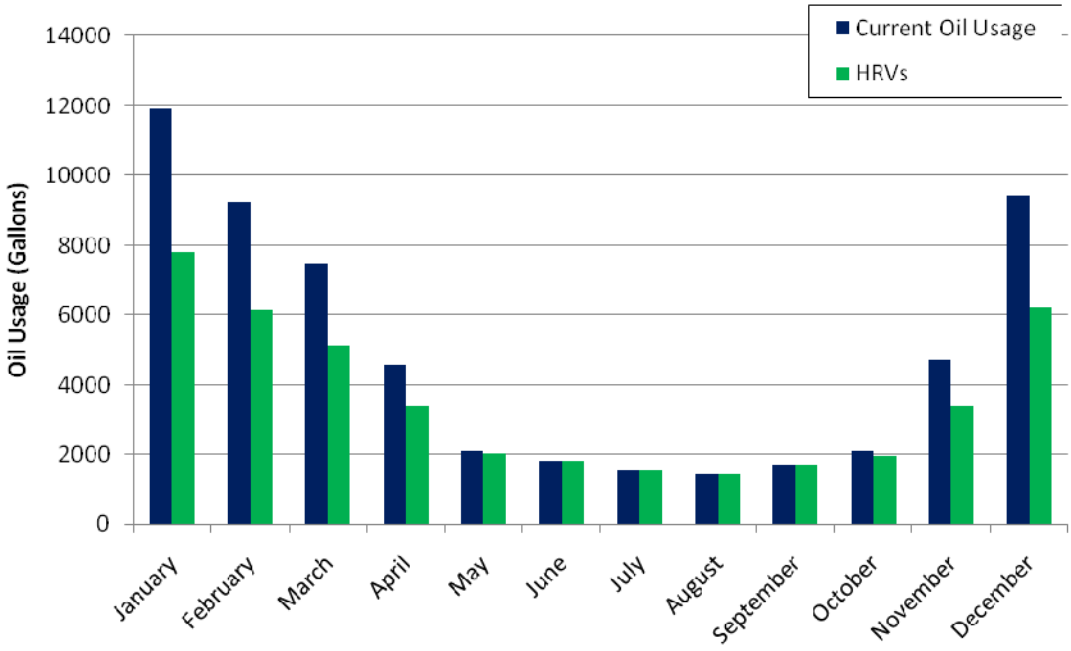


Table 4.2-3 below demonstrates potential fiscal savings, and an approximate payback period from the addition of HRVs to the nineteen major air handling units. HRV costs have been estimated based on anticipated ventilation rates, as taken from original

building Mechanical Schedules. Current outdoor air ventilation rates may be different from those originally scheduled. Facility personnel should verify the outdoor air ventilation rate of each air handler to confirm the validity of the estimated capital cost. The cost estimate spreadsheet for this upgrade may be found in Appendix H.

Table 4.2-3 – Voorhees Addition of HRVs	
Predicted Additional Annual Electricity Use (kWh)	(60,500)
Additional Annual Electricity Cost (Fiscal)	($8,935.85)
Predicted Annual Fuel Oil Savings (Gallons)	15,379
Total Annual Fuel Oil Savings (Fiscal)	$25,559.90
Total Fiscal Savings	$16,624
Initial Capital Cost of Upgrade	$312,822
Incentives	$0
Capital Cost of Upgrade	$312,822
Simple Payback	**18.8**
ROI	**5.3%**

It was noted during the field audit, that two of the air handling units in the gym penthouse already have heat recovery wheels that are in need of repair. However, to be conservative, the cost to replace these entirely has been factored in to the initial cost demonstrated in Table 4.2-3.

All major equipment noted during CDM's on site audit is listed in Table 4.2-4 below, along with estimated current ages and ASHRAE-expected service lives. It should be noted that only equipment that was observed at the time of the audit is included. As there have been no major renovations to the school HVAC system since the school was constructed, it is assumed that much of the equipment is the same age as the school. However, equipment is included to indicate ASHRAE expected service lives. Facility personnel should verify CDM's estimated equipment ages, and compare against expected equipment service lives to determine whether a replacement is warranted. Additionally, ASHRAE expected service lives listed for air handling units are expected service lives for the fans within the units.

Table 4.2-4
Voorhees High School HVAC Equipment Service Lives

Description	Tag	Service Location	Manufacturer	Model	Estimated Age (Years)	ASHRAE Expected Life (Years)
Air Handling Unit	1	Library	GE	5KS213A6205B	~35	25
Air Handling Unit	2	Mall Lockers	Wey	00218EP3E145T	~35	25
Air Handling Unit	3	3rd Floor	Wey	015080T3E254T	~35	25
Air Handling Unit	4	3rd Floor	Balder	M2515T	~35	25
Air Handling Unit	5	2nd Floor	Hemco	HBO104FBA	~35	25
Air Handling Unit	6	Auditorium	Hemco	HBO154BA	~35	25
Air Handling Unit	7	Home Economics/Music	Hemco	HBO154BA	~35	25
Air Handling Unit	8	Main Office	Wey	ET35524	~35	25
Air Handling Unit	9	Guidance	Hemco	HBO104FBA	~35	25
Air Handling Unit	10	142-144 & 242-244	AO Smith	G390772-01	~35	25
Air Handling Unit	11	Art Room & Hall	US Electric	R-8592-00-491	~35	25
Air Handling Unit	12	Kitchen	US Electric	R-8592-00-491	~35	25
Air Handling Unit	13	Cafeteria/FDR	Wey	00718EPE213T	~35	25
Air Handling Unit	14	Gym	Hemco	HBO154BA	~35	25
Air Handling Unit	15	Locker Rooms	World Wide Electric	WW10-215T	~35	25
Air Handling Unit	16	Gym	Wey	00718EP3E213T	~35	25
Air Handling Unit	17	Wrestling Room	Vanguard	VM5200E	~35	25
Air Handling Unit	18	Maintenance Shop	Gould Century		~35	25
Air Handling Unit	19	Maintenance Office	Leyland Faraday	M-6250E	~35	25
Air Handling Unit	1A	New Cafeteria	Trane	SLZA 3404LF	<25	25
Air Handling Unit	2A	Ceramics	Gould Motor	6-320064-2	<25	25
Air Handling Unit	3A	Athletics Office	GE		<25	25
Air Handling Unit	4A	3rd Floor 1980 Section	Wey	07718EP3ET13T	<25	25
Air Handling Unit	5A	Back Gym	US Electric	R-8591-06-66MM	<25	25

Table 4.2-4 Voorhees High School HVAC Equipment Service Lives						
Roof-top Unit	RTU-Stage	Dressing Room	Trane	BAYHTRR406AA	<15	15
Roof-top Unit	RTU-1	Computer Server Room	Sanyo	C3072R	<15	15
Roof-top Unit	RTU-2	Computer Server Room	Sanyo	CL1825	<15	15
Boiler		Entire Building	Cleaver Brooks	CB-250	~35	35
Boiler		Entire Building	Cleaver Brooks	CB-250	~35	35
Chiller		Entire Building	Trane	CVHE050	**~35**	23
Cooling Tower		Entire Building	Baltimore Aircoil Co.	33341	**~35**	22

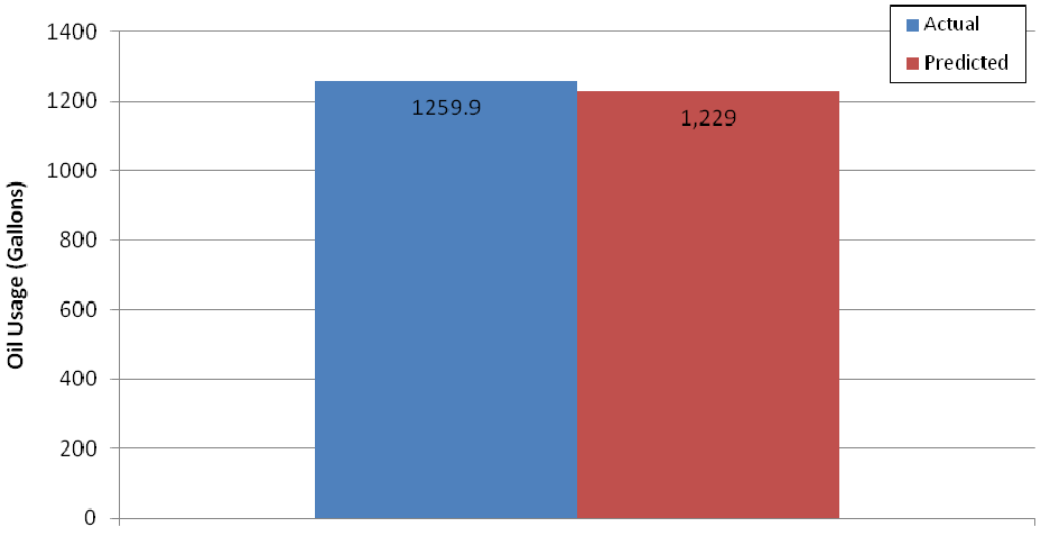
4.2.3 District Administration Building

An eQuest model was created to predict monthly and annual energy usages of the District Administration Building.

The District Administration Building utilizes a fuel oil-fired furnace for heating, with outdoor DX condensers for cooling. Due to the nature of fuel oil systems, it is difficult to assess monthly usages. Delivered quantities of fuel oil do not necessarily reflect actual usage between deliveries. Therefore, CDM has calibrated the school model based on the total annual fuel oil delivered.

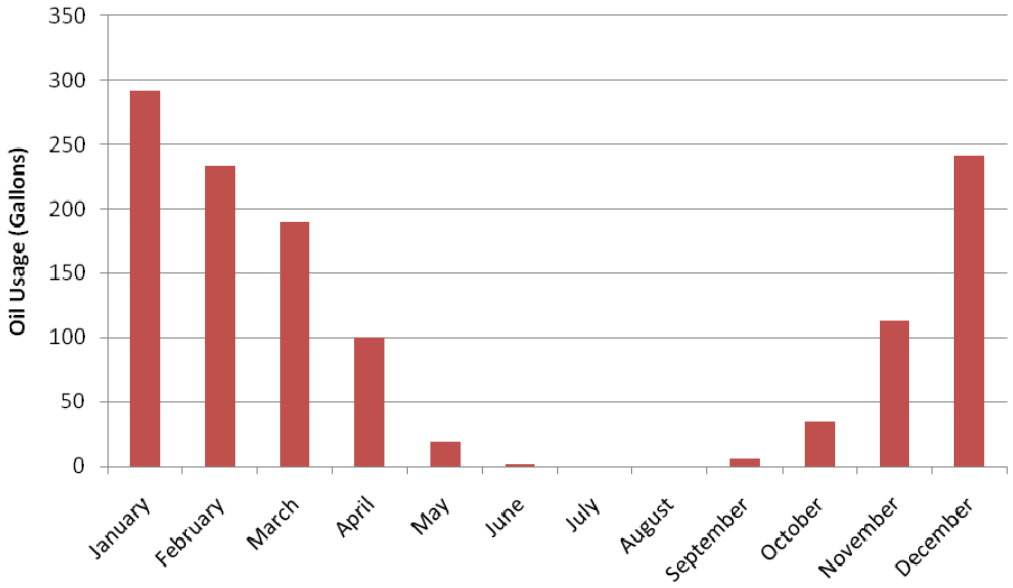
CDM received fuel oil delivery bills for the Administration Building dated from November, 2008 through May, 2009. As this constitutes the majority of the heating season, it is assumed that these deliveries account for one year's worth of fuel oil consumption for the building. Figure 4.2-12 below compares the annual fuel oil usage predicted by the model with that actually delivered during the 2008-2009 heating season.

Figure 4.2-12: District Administration Building Annual Fuel Oil Usage



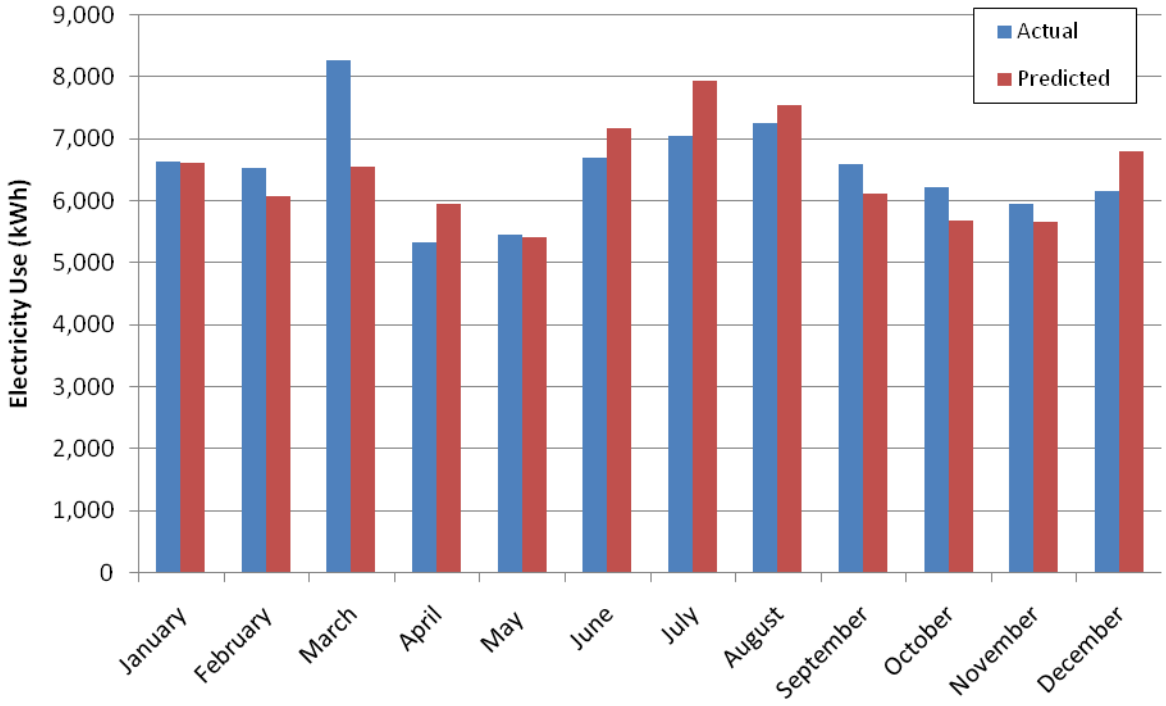
As stated, the actual monthly fuel oil usage is difficult to ascertain. Therefore, Figure 4.2-13 below shows only the model-predicted monthly fuel oil usage.

Figure 4.2-13: District Administration Building Monthly Fuel Oil Usage



CDM found no significant energy conservation measures in this building. However, for information purposes, the eQuest model-predicted monthly electrical energy usages are displayed in Figures 4.2-14. The actual energy usages are average monthly usages compiled from approximately three years of data from 2006 through 2008.

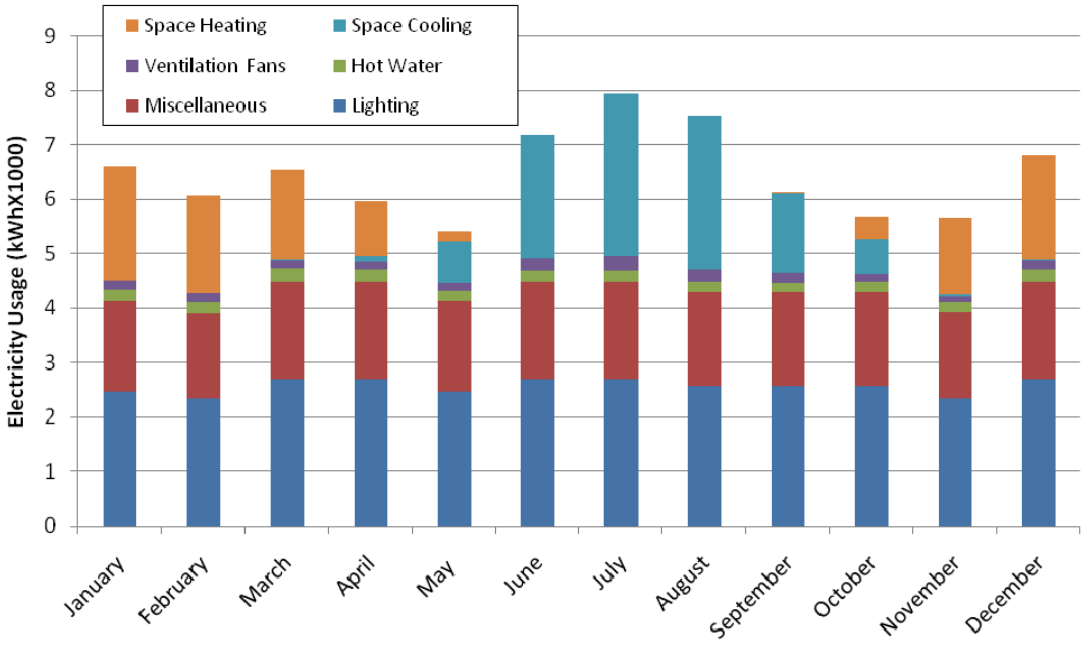
Figure 4.2-14: District Administration Building Electricity Usage



CDM could not determine why the electricity usage for this building was abnormally high in March every year. Because eQuest uses average climate data, and average usage schedules to predict electricity loads, it was difficult to mimic a usage pattern with a similar spike in March. The model was therefore calibrated to reflect the usage pattern during the rest of the year, which is more typical of a New Jersey building that is heated partially by electricity.

With the model calibrated, eQuest is capable of demonstrating the major electricity usage categories. Figure 4.2-15 below displays the model-predicted electricity usage, broken into major categories.

Figure 4.2-15: District Administration Building Electricity Usage Breakdown



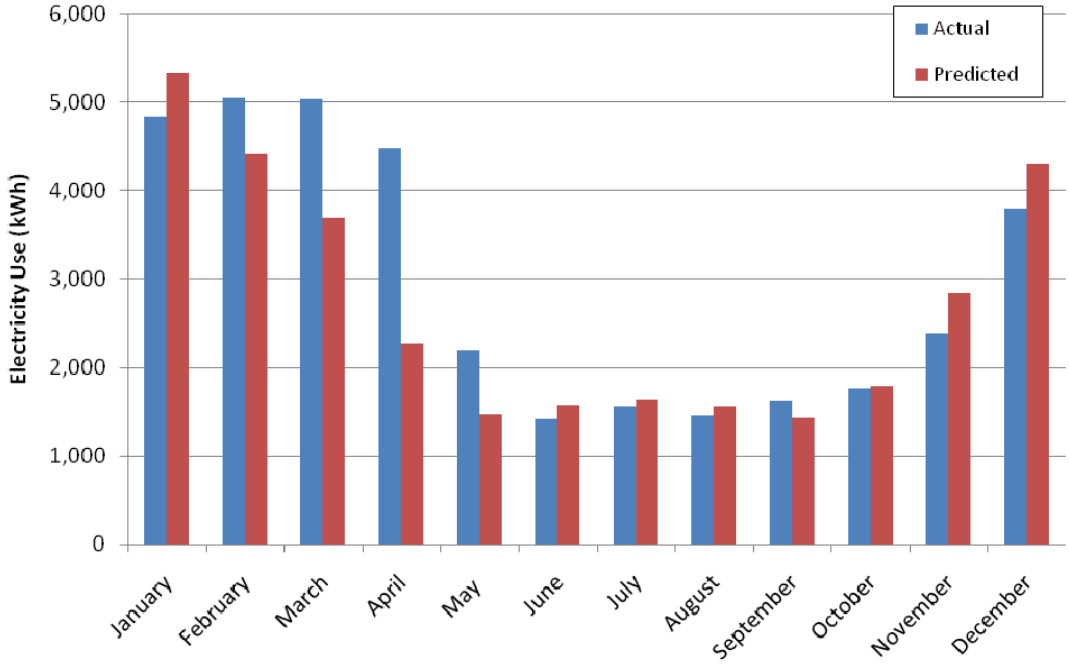
4.2.4 Facilities & Technologies Office

An eQuest model was created to predict monthly and annual energy usages of the Facilities and Technologies Office.

The Office is heated with electric resistance baseboards, each with individual thermostats, and cooled with a split system air handling unit, with an outdoor DX condenser.

CDM found no significant energy conservation measures at the Facilities and Technologies Office, but electricity usage data is presented in Figure 4.2-16 below for information purposes.

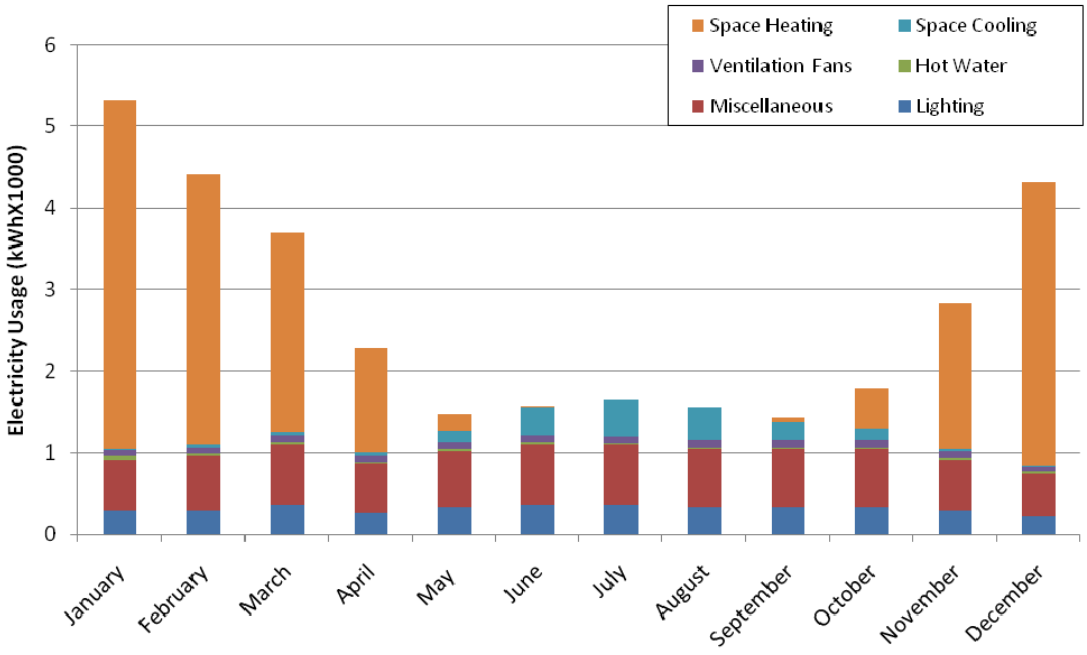
Figure 4.2-16: Facilities Building Electricity Usage



Again, the electricity usage at the Facilities & Technologies Office did not follow an entirely typical pattern. It may be seen that over the last three years, the highest electricity usages were in February and March, with an additional abnormally high load in April. As this is an electrically-heated building, it would be expected that the highest electrical loads would be during the coldest months of the year (December through February). As eQuest incorporates average climate data, taken over several decades, it is difficult to mimic an atypical pattern such as the one above. Therefore, the model was calibrated against the total yearly electricity usage. It can be seen that, with the exception of February through April, the model fairly accurately predicted the electricity usage for the rest of the year.

With the model calibrated, it may be broken into major electricity usage categories, as seen in Figure 4.2-17 below.

Figure 4.2-17: Facilities Building Electricity Usage Breakdown

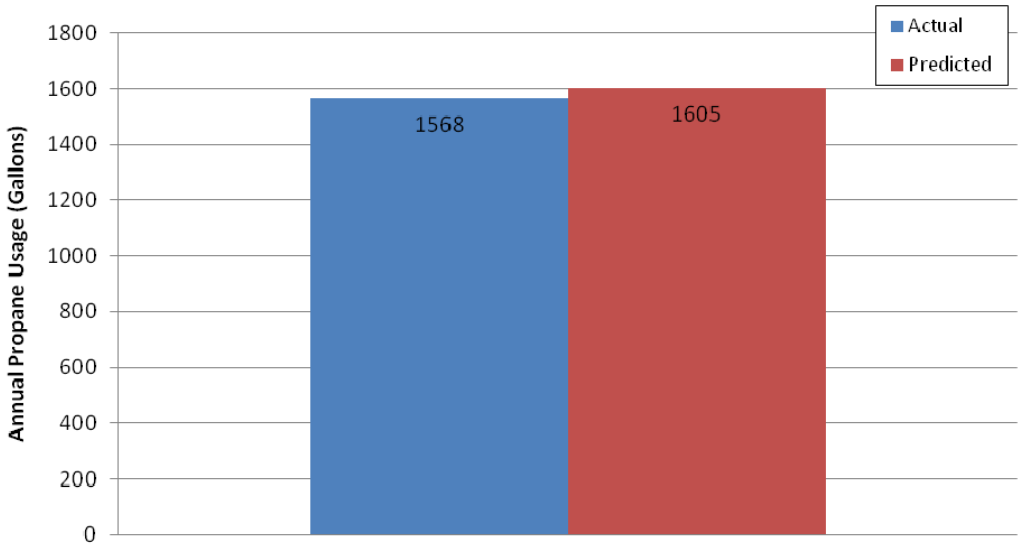


It becomes apparent that space heating constitutes the largest electrical demand. However, because the annual usage is relatively small, it would not prove cost-beneficial to switch to an entirely different heating system. The annual savings would not be significant enough to warrant such a change. CDM therefore has no energy conservation recommendations for this building.

4.2.5 North Hunterdon – Maintenance Garage

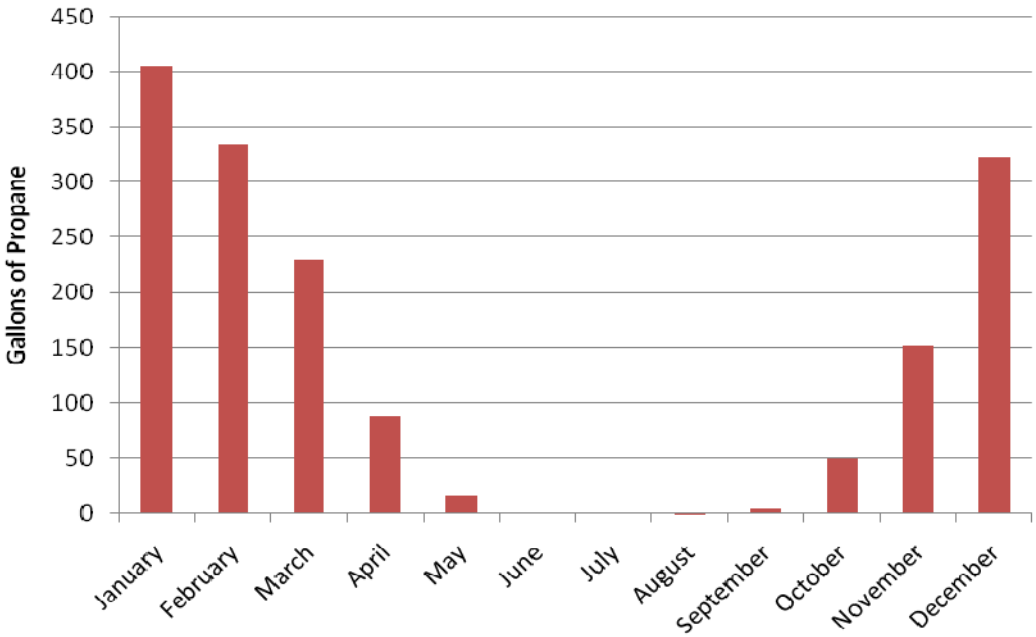
A model of the North Hunterdon Maintenance Garage was created using an excel-based modular building heat loss spreadsheet, to predict heating loads for the building. BIN climate data from Newark, NJ was used to predict monthly heating requirements. From this, approximate propane usage may be calculated. Like fuel oil, propane usage can be difficult to assess, as clients are billed by delivered amount. Delivered amounts do not necessarily reflect actual propane usage. However, for the purpose of demonstrating actual usage, CDM assumes that propane was consumed at the rate it was delivered. Based on this assumption, Figure 4.2-18 compares predicted annual propane usage with actual annual propane usage (assuming one gallon of propane provides 95,000 BTU of heat).

Figure 4.2-18: North Hunterdon Maintenance Garage Annual Propane Usage



With the model predicting annual fuel usage reasonably accurately, it can then be broken into predicted monthly usages, as shown in Figure 4.2-19.

Figure 4.2-19: North Hunterdon Maintenance Garage Monthly Propane Usage



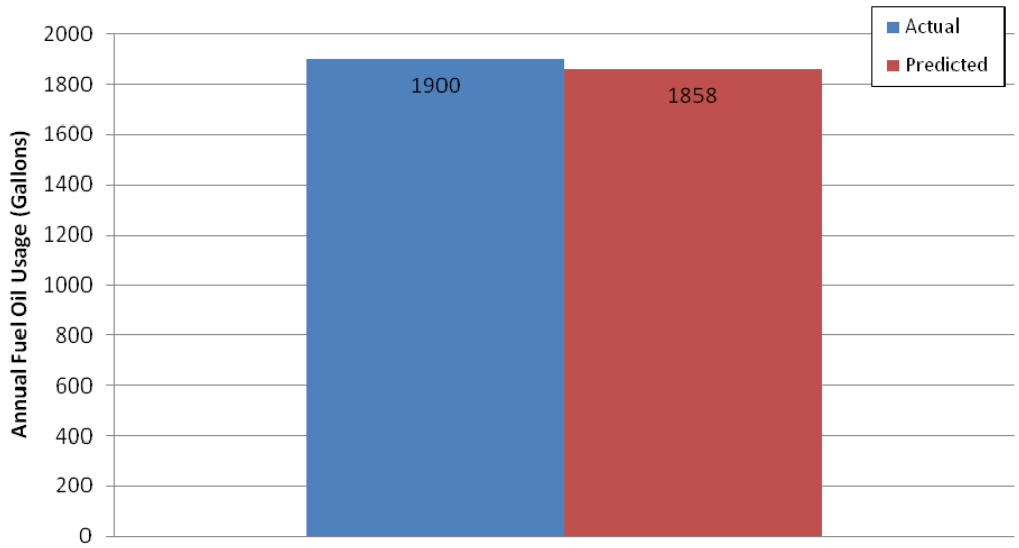
CDM found no HVAC-related energy savings measures for this building. Usage data is shown for information purposes only.

4.2.6 Voorhees – Maintenance Garage

A model of the North Hunterdon Maintenance Garage was created using an excel-based modular building heat loss spreadsheet, to predict heating loads for the building. BIN climate data from Newark, NJ was used to predict monthly heating requirements. From this, approximate fuel oil usage may be calculated.

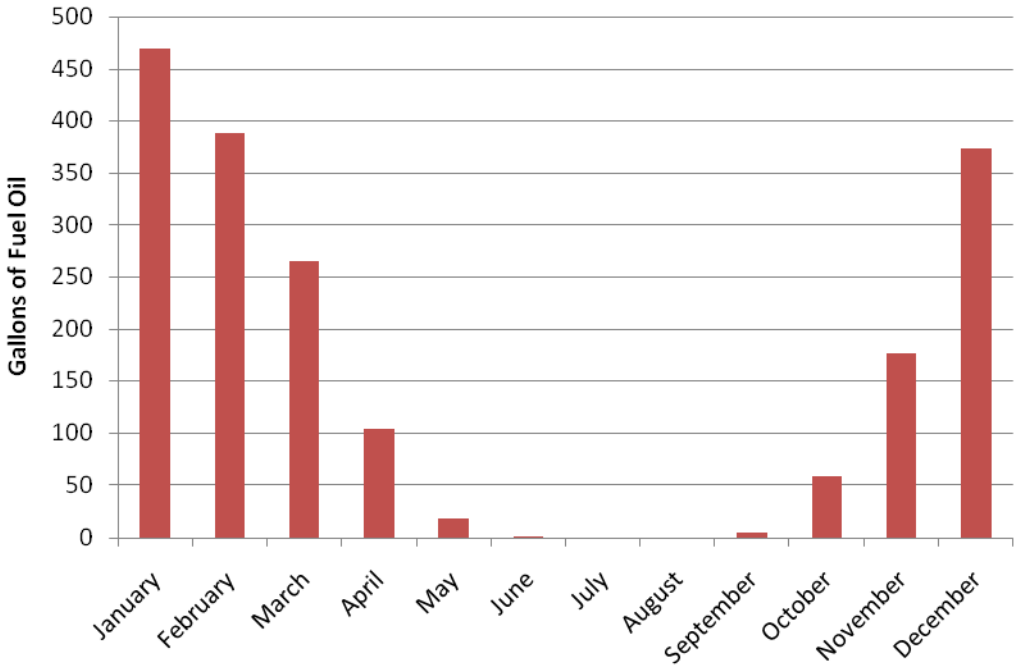
CDM received fuel oil delivery bills dated between December, 2008 and May, 2009. Again, fuel oil usage is difficult to assess, as delivered amounts do not necessarily reflect actual consumption. However, for the purpose of demonstrating actual usage, CDM assumes that the four fuel oil deliveries dated between December, 2008 and May, 2009 account for one year of fuel oil consumption. Based on this assumption, Figure 4.2-20 compares predicted annual fuel oil usage with actual annual fuel oil usage (assuming one gallon of fuel oil provides 138,500 BTU of heat).

Figure 4.2-20: Voorhees Maintenance Garage Annual Fuel Oil Usage



With the model predicting annual fuel usage reasonably accurately, it can then be broken into predicted monthly usages, as shown in Figure 4.2-21.

Figure 4.2-21: Voorhees Maintenance Garage Monthly Fuel Oil Usage



Predicted monthly usages are shown for information purposes only. CDM found no HVAC-related energy savings measures for this building.

4.3 Photovoltaic Solar Energy System

4.3.1 Overview

Photovoltaic (PV) cells convert energy in sunlight directly into electrical energy through the use of silicon semi conductors, diodes and collection grids. Several PV cells are then linked together in a single frame of module to become a solar panel. PV cells are able to convert the energy from the sun into electricity. The angle of inclination of the PV cells, the amount of sunlight available, the orientation of the panels, the amount of physical space available and the efficiency of the individual panels are all factors that affect the amount of electricity that is generated.

Based on the estimated cumulative total available roof area, calculations determine that the installation of a system rated at approximately 554 kW (dc) will be appropriate for North Hunterdon High School, and a system rated at approximately 492 kW (dc) will be appropriate for Voorhees High School. The total for the North Hunterdon High School is 464,506 kWh, and 412,265 kWh (ac) for the Voorhees High School.

As part of this energy audit, a preliminary engineering feasibility study of the sites outlined above to support solar generation facilities was completed consisting of the following tasks:

a. Site Visit by our engineers.

b. Satellite Image Analysis and Conceptual design and layout of the photovoltaic system

c. Design and construction cost estimates

d. Determine a preliminary design for the size and energy production of the solar system.

The total unobstructed available area of each section of the roof with southern exposure was evaluated. It is important to note the following:

1. The structural integrity of the roofs was not confirmed during our site visit. The schools may require some degree of roofing work prior to the implementation of a solar system.

2. In the case of the flat areas, the PV system sizing and kWh production was calculated assuming the installation of a crystalline module facing south direction (220 Degree Azimuth) and tilted approximately 20 degrees to allow better rain water shedding and snow melting. Please note that the kWh production as well as system size may differ significantly based on final panel tilt selected during the RFP and design phase.

3. Blended electric rates were used based on actual utility bills and were applied for each facility.

The following is a preliminary study on the feasibility of installing a PV solar system at the North Hunterdon-Voorhees Regional High School District buildings to generate a portion of the facility's electricity requirements. The system is designed to offset the electric purchased from the local utility and not as a backup or emergency source of power.

In order to determine the best location for the installation of the PV solar system, a satellite image analysis and site walkthrough of the school district buildings was performed on June 3rd and 4th. As per the Scope of Work, only the building roofs were considered for PV installation.

Also, as part of our assessment we investigated possible locations for electrical equipment that need to be installed such as combiner boxes, disconnect switches and DC to AC inverters. Consideration was also given to locations of interconnection between the solar system and building's electrical grid.

4.3.2 North Hunterdon High School

The roof of this building has a flat roof with a number of obstructions such as exhaust fans, rooftop HVAC units, and electrical and gas piping. There is a minimal amount of shading on the roof from adjacent foliage that would need to be addressed during

the design phase of the project. The structural integrity of the roof was not confirmed although a visual inspection revealed no leaks or major defects. The structural integrity of the roof and the existence of a warranty shall be confirmed prior to the implementation of a PV system.

The Project Team conducted both a facility walkthrough and a satellite image analysis and based on the estimated total available area we calculated the installation of a system rated at approximately 554 kW (dc).

Electrical Service

The interconnection point for the solar arrays will require a modification of the service entrance equipment wherein connections will have to be made between the main circuit breaker and the CT section of the switch board. If there is no available space for the inverter to be installed within the electrical room, the inverter shall be installed outside on a concrete pad. The inverter would be housed in a NEMA 3R enclosure. The AC wiring would run from the inverters into the connection point(s) at the switchboard. Any connection points would have to meet NEC and local utility requirements.

4.3.3 Voorhees High School

The High School is comprised of seven buildings that have been added over the years because of student population increase. The roofs of the buildings are flat. Areas have been identified that would be suitable for a solar panel installation taking into consideration the number of rooftop units and the amount of gas and electrical piping in these areas. There appeared to be little to no shading from adjacent foliage in those areas deemed suitable for a solar installation.

The roofs of all buildings appear to be in good condition. The structural integrity of each roof section, the age of the roofs and the existence of a warranty should be confirmed prior to the implementation of a PV system, as solar panels have the same useful life as a standard roof, the solar panels should be installed following any necessary roof repairs or roof replacement.

A facility walkthrough and a satellite image analysis of the estimated total available roof area was conducted. Based on our surveys, we calculated the installation of a system rated at approximately 492 kW (dc).

Electric Service

The interconnection point for the solar arrays will require a modification of the service entrance equipment wherein connections will have to be made between the main circuit breaker and the CT section of the switch board. If there is no available space for the inverter to be installed within the electrical room, the inverter shall be installed outside on a concrete pad. The inverter would be housed in a NEMA 3R enclosure. The AC wiring would run from the inverters into the connection point(s) at the switchboard. Any connection points would have to meet NEC and local utility requirements.

The proposed Photovoltaic (PV) Power systems outlined above for each school are comprised of the PV arrays, inverter(s), combiner boxes, disconnect switches, and all of the necessary wiring and interconnection equipment. The solar panels will be mounted onto the roof. The array outputs will feed power into the DC to AC inverters. AC outputs will then be connected at each building's electrical service as outlined above. Pending further engineering analysis of the roofs, it is yet to be determined if the solar arrays will be installed using a self-ballasting system, or roof penetration system, or a combination of both.

4.3.4 Basis for Design and Calculations

The most common roof mounted system is referred to as a ("fixed tilt") system typically mounted to a metal rack that can be fixed at a specific angle. There are also ("tracking systems") or movable along one or two axes to follow the position of the sun during the day. For a roof-mounted PV system, tracking systems are very rarely installed and are usually used for ground-mounted systems only, as they require more complex racks and higher maintenance costs. For the "fixed" system, the tilt is determined based on the following factors: geographical location, total targeted kWh production, seasonal electricity requirements and weather conditions such as wind. Ideally, the module tilt for Northern New Jersey should be 25-35 degrees with an azimuth as close as possible to 180 (south); however, our experience has shown that PV systems are typically installed at a tilt of 20 degrees or lower in order to avoid any issues with wind and to maximize total system size

Fixed Tilt System

The type of PV panels and equipment used to mount the system shall be determined based on the wind conditions and structural integrity of the roof determined during the design phase of the project. In general, penetration/tie-down systems, non-penetrating ballasted type systems, or a combination of the two should be considered.

Calculation of PV System Yield

An industry accepted software package, PV Watts, was used to calculate projected annual electrical production of the crystalline silicon PV system in its first year , as summarized in Table 4.3.5-1. The assumptions we used in the calculations were as follows: solar array tilt angle of 10°, array azimuth of 170° and a de-rate factor of 0.8. The energy savings generated by the installation of approximately 1049 kW dc of photovoltaic power is estimated to be 876,769 kWh ac.

Table 4.3.5-1 System Summary

Site	Est. Area (ft2)	kWh Production	kW dc	Annual Energy Savings	Est. Annual SREC
North Hunterdon HS	55,362	464,206	554	$75,155	$439,236
Voorhees HS	49,202	412,563	492	$66,794	$390,371
Totals	104,564	876,769	1049	$141,949	$829,607

Total Costs

It should be noted that construction costs are only estimates based on historic data compiled from similar installations, and engineering opinion. Additional engineering and analysis is required to confirm the condition of the roofs, structural integrity of the roofs, the system type, sizing, costs and savings. Budget costs assume existing roofs are structurally sound, do not need to be replaced, and can accommodate a solar system. For illustration purposes, a draft financial analysis pro forma is attached outlining all project costs and revenues.

Table 4.3.5-2 Budget Installation Cost

Budget Installation Cost	$9,610,760

As stated above the estimated installation costs are based on significant experience with the pricing of solar installations in New Jersey, and are intended to provide NHV with a realistic budget cost. A typical solar installation can vary in cost from $7.00 - $10.00 per watt depending on size, complexity of the system, labor rates, etc. Approximately 60-70% of that number is material costs while the balance is labor, engineering, etc. Like any installation, certain conditions can affect a price upward or downward. For purposes of this analysis the estimated installation cost does not include any roofing or structural work which may be required to maintain warranties or for additional structural support. We have included a budget of $9/watt for the solar system installation with an additional estimated budget of $100,000 for potential electric service work.

Refer to Section 7 for discussion on Solar Renewable Energy Certificates and other financing options for solar projects. The financial model in Appendix E provides an annual forecast illustration of project revenues and costs for 25 years.

Section 5
Evaluation of Energy Purchasing and Procurement Strategies

5.1 Energy Deregulation

In 1999, New Jersey State Legislature passed the Electric Discount & Energy Competition Act (EDECA) to restructure the electric power industry in New Jersey. This law, the deregulation of the market, allowed all consumers to shop for their electric supplier. The intent was to create a competitive market for electrical energy supply. As a result, utilities were allowed to charge Cost of Service and customers were given the ability to choose a third party supplier. Energy deregulation in New Jersey increased the energy buyers' options by separating the function of electricity distribution from that of electricity supply.

Jersey Central Power and Lighting (JCP&L) is currently the generator and supplier of energy for the Somerset Hills School District. JCP&L is one of seven subsidiaries of First Energy Corp., an energy company headquartered in Akron, Ohio. Energy deregulation creates the opportunity to choose your electric generation supplier. The benefit of this is the ability to choose a supplier based on what is important to you, for example, lowest rate or how the electric generation supply is produced.

To sell electric generation service in New Jersey, electric power suppliers must be licensed by the New Jersey Board of Public Utilities (NJ BPU). They must also be registered with the local public utility (JCP&L) to sell electric service in that utility's service areas. The following suppliers are licensed with the NJ BPU and are registered to sell electric service in the JCP&L service territory:

- Amerada Hess Corp
- BOC Energy Services
- Con Edison Solutions, Inc.
- Constellation New Energy, Inc.
- Direct Energy, LLC.
- First Energy Solutions Corp.
- Glacial Energy
- Integrys Energy Service
- Liberty Power
- Pepco Energy Services, Inc.

- PP&L Energy Plus, LLC.
- Reliant Energy Solutions East, LLC.
- Sempra Energy Solutions
- South Jersey Energy
- Strategic Energy LLC
- Suez Energy Resources NA, Inc
- UGI Energy Services

5.1.1 Alternate Third Party Electrical Energy Supplier

In evaluating the potential for an alternative third party supplier, CDM contacted and requested a proposal for electrical service to the District's buildings from Glacial Energy. The objective of which was to get an overall idea of whether or not switching electric energy suppliers is an avenue that the District should pursue further to obtain electrical energy cost savings.

The District has already pursued this avenue with natural gas, as Elizabethtown Gas is the overall distributor for the area and Woodruff Energy is the third party supplier.

CDM received a proposal from Glacial Energy for eight (8) of the District's accounts. The remaining account's were too small for Glacial to perform an economic analysis on; however, Glacial Energy has indicated that if the District does decide to pursue this avenue the smaller accounts can also be transferred and a 20% savings is expected.

Glacial Energy's proposal is included in Appendix F.

Glacial Energy has proposed a flat rate retail cost per kWH over the next 12 month period for each service location. The following table, Table 5.1-1, summarizes the annual cost savings available based on historical energy consumption rates per location. The retail rates used in this analysis represent the baseline generation rates from the two suppliers and do not include any applicable demand charges, societal benefits charges, transmission charges, energy charges, reconciliation charges, transitional assessment charges or system control charges that were included in the aggregate rates presented in Section 3. These baseline generation rates, are used for comparison purposes to identify any potential energy cost savings, as all other applicable charges cannot be avoided by switching suppliers.

Table 5.1-1: Potential Energy Cost Savings with an Alternate Third Party Supplier – Glacial Energy

Service Location	Historical Annual Consumption (kWH)	Annual Cost with JCP&L	Proposed Annual Cost with Glacial Energy	Potential Annual Savings
N. Hunterdon H.S. Main Bldg (Account # 100004629703)	3,665,139	$459,607 (@ 0.1254/kWH)	$350,803 (@ $0.09571/kWH)	$108,804
N. Hunterdon H.S. Stadium (Account # 100003687652)	76,244	$10,271 (@ $0.13471/kWH)	$7,328 (@ $0.09611/kWH)	$2,943
N. Hunterdon H.S. Marquee (Account # 100003687066)	8,959	$1,120 (@ $0.125/kWH)	$854 (@ $0.0953/kWH)	$266
Voorhees H.S. Main Bldg (Account # 100003854401)	3,116,499	$393,783 (@$0.12635/kWH)	$296,888 (@ $0.09526/kWH)	$96,895
Voorhees H.S. (Account # 100003854492)	4,234	$569 (@ $0.13428/kWH)	$406 (@ $0.09598/kWH)	$162
Facilities & Tech Office (Account # 100003687710)	34,928	$4,296 (@ $0.123/kWH)	$3,357 (@ $0.09611/kWH)	$939
N. Hunterdon Maintenance Garage (Account # 100003687884)	26,687	$3,432 (@ $0.12862/kWH)	$2,578 (@ $0.0966/kWH)	$855
Voorhees Maintenance Garage (Account # 100003854443)	8,595	$1,091 (@ $0.12699/kWH)	$819 (@ $0.09534/kWH)	$272
			Total Potential Annual Savings:	**$211,136**

As energy cost savings are available by switching to a third party supplier, such as Glacial Energy, this is a recommended energy cost savings measure. The estimated annual cost savings available by switching the eight (8) services summarized above, over to Glacial Energy is $211,136 (a 25% savings). CDM recommends that the District investigate this opportunity further and compare proposals from alternate third party suppliers to obtain the lowest electrical energy rates available.

It should be noted that Glacial Energy is proposing a flat rate charge for the North Hunterdon and Voorhees High School main building service connections. These buildings are currently on a peak / off-peak rate schedule from JCP&L. CDM concurs with Glacial Energy, that a flat rate structure would present cost savings for the District. As presented in Section 3, a peak / off-peak rate structure presents savings in consumption (kWH) charges, to allow for mechanical equipment to run during off-peak hours versus peak hours. For instance if the school had a chiller system, the chiller would be run at night (at the off-peak rate) to produce ice that will allow for cool air to be produced during peak hours, without running the equipment and consuming energy at the peak rate per kWH. However from CDM's understanding, the high school's do not currently have HVAC systems that would warrant being on a peak/off-peak schedule. In addition, demand charges (/kW) and monthly customer charges are greater under a peak/off-peak rate schedule, than a flat rate schedule. It is recommended that the District evaluate the rate schedule for the two high schools further with a representative from JCP&L or another third party supplier, to ensure that there are not more cost effective options available.

Section 6
Ranking of Energy Conservation and Retrofit Measures (ECRM)

6.1 ECRMs

The main objective of this energy audit is to identify potential Energy Conservation and Retrofit Measures and to determine whether or not the identified ECRM's are economically feasible to warrant the cost for planning and implementation of each measure. Economic feasibility of each identified measure was evaluated through a simple payback analysis. The simple payback analysis consists of establishing the Engineer's Opinion of Probable Construction Cost estimates, O&M cost savings estimates, projected annual energy savings estimates and the potential value of New Jersey Clean Energy rebates or Renewable Energy Credits, if applicable. The simple payback period is then determined as the amount of time (years) until the energy savings associated with each measure amounts to the capital investment cost.

As discussed is Section 3, aggregate unit costs for electrical energy delivery and usage and natural gas delivery and usage, which accounts for all demand and tariff charges at each facility, was determined and utilized in the simple payback analyses.

In general, ECRMs having a payback period of 20 years or less have been recommended and only those recommended ECRMs within Section 4 of the report have been ranked for possible implementation. The most attractive rankings are those with the lowest simple payback period.

Ranking of ECRMs has been broken down into the following categories:

- Lighting Systems
- HVAC Systems
- Solar Energy

6.1.1 Lighting Systems

Table 6.1-1 includes rankings of all recommended ECRMs to provide energy savings for all building lighting systems, which include the installation of energy-efficient lighting retrofit kits, electronic ballasts, reflectors, energy-efficient luminaires and occupancy sensors. A detailed discussion on building lighting systems is presented in Section 4.1.

Table 6.1-1 Ranking of Energy Savings Measures Summary – Lighting System Retrofits					
Site	**Retrofit Cost**	**Incentives**	**Total Cost**	**Annual Fiscal Savings**	**Simple Payback (Years)**
Voorhees High School Maintenance Garage	$577.5	$155	$422.5	$780.8	**0.7**
Voorhees High School	$32,736	$9,010	$23,726	$28,156	**0.9**
North Hunterdon High School Maintenance Garage	$2,968	$875	$2,093	$1,297	**1.6**
North Hunterdon High School	$58,651	$9,690	$48,961	$21,860	**2.3**
North Hunterdon High School District Admin Building	$10,895	$3,720	$7,175	$1,808	**4.0**
North Hunterdon High School Facilities/Technology Office	$1,275	$300	$975	$216	**4.5**
Equipment and Labor Totals	**$107,102.5**	**-$23,750**		**$54,117.8**	
		PROJECT TOTAL	***$83,352.5***		

6.1.2 HVAC Systems

Table 6.1-2 includes rankings of all recommended ECRMs to provide energy savings for building HVAC systems, which provide a simple payback of less than 20 years. A detailed discussion on building HVAC systems is presented in Section 4.2.

Table 6.1-2 Ranking of Energy Savings Measures Summary – HVAC System Upgrades					
Building & Measure	**Retrofit Cost**	**Incentives**	**Total Cost**	**Annual Fiscal Savings**	**Simple Payback (Years)**
Voorhees High School – AHU Control Change (Turn off at night)	$4,698	$0	$4,698	$118,428	**0.1**
Voorhees High School – Heat Recovery Ventilators	$312,822	$0	$312,822	$16,624	**18.8**
Equipment and Labor Totals	**$317,520**	**$0**		**$135,052**	
			PROJECT TOTAL	***$317,520***	

6.1.3 Solar Energy

Implementation of a new solar energy system has been evaluated to determine the economic feasibility for furnishing and installing such systems for the North Hunterdon-Voorhees High School District buildings. Based on the simple payback modeling performed, it would benefit the District to further investigate installing the solar energy systems at the North Hunterdon and Voorhees High Schools. This is

primarily based on the initial upfront capital investment required for a solar energy system installation and an acceptable payback period.

Two major factors influencing the project financial evaluation is the variance of the prevailing energy market conditions and Solar Renewable Energy Credit (SREC) rates, with the largest impact to the simple payback model being the SREC credit pricing.

Table 6.1-3, includes a ranking of the solar energy ECRMs for the two (2) high schools.

Table 6.1-3
Ranking of Energy Savings Measures – Solar Energy

Building	Installation Cost	Annual SREC Credit	Annual Fiscal Savings	Payback Period (Years)
North Hunterdon High School	$5,082,580	$439,236	$75,155	**9.8**
Voorhees High School	$4,528,180	$390,371	$66,794	**9.9**
Equipment and Labor Totals	**$9,610,760**	**$829,607**	**$141,949**	

It should be noted that Federal and other tax incentives were not included in this simple payback model. Refer to Appendix E for more detailed solar energy models.

Section 7
Available Grants, Incentives and Funding Sources

7.1 Solar Energy Incentives and Financial Options

7.1.1 Solar Renewable Energy Certificates

As part of New Jersey's Renewable Portfolio Standards (RPS), electric suppliers are required to have an annually-increasing percentage of their retail sales generated by solar energy. Electric suppliers fulfill this obligation by purchasing SRECs from the owners of solar generating systems. One SREC is created for every 1,000 kWh (1 MWh) of solar electricity generated. Although solar systems generate electricity and SRECs in tandem, the two are independent commodities and sold separately. The RPS, and creation of SRECs, is intended to provide additional revenue flow and financial support for solar projects in New Jersey.

We have assumed what we believe to be a conservative estimate of the market value of SRECs over a 15 year period. Over the first 5 years, we have assumed that the SREC value would be at 80% of the NJBPU market forecast. For years 6 through 9, we have assumed that the SREC value would be at 75% of the NJBPU market forecast. Finally, for the balance of the term, we have assumed that the SREC value would be at a floor of $350 per SREC. We believe these values to be conservative compared to recent market transactions. We know of recent transactions in excess of $650 for 1 year, $550 for 4 years and $375 for 12 years. Should the winning developer have contracts in place, or a view of the market that SRECs will exceed our assumptions; the economics of the project will improve.

In addition, State law now requires that the utility must interconnect and net meter your photovoltaic system provided your system passes the local electrical inspection (National Electric Code) and meets the utility safety requirements as outlined in the law. Net metering is the term given which allows your utility meter to literally "spin backward" when the solar panels are producing more electricity than the building is using. However, given the high electrical demand of the facility at most times, this scenario is unlikely to happen.

7.1.2 Financing Options for Solar Projects

1. Direct Purchase by SHSD – under this model, SHSD would fund the project directly, and receive all of the financial benefits of a PV system directly.

2. Power Purchase Agreement (PPA) – under this model, a private, third party would invest all of the capital necessary to build, own, operate, and maintain the PV system. The third party would claim all of the financial benefits of the project, including federal tax incentives and accelerated depreciation benefits that public sector entities are not entitled to. SHSD would enter into a 15 or 20 year agreement to purchase power from the PV system at a rate guaranteed to be less

than the cost of power from the utility. It should be noted that most PPAs require a minimum system size of approximately 300 kW on one building, so SHSD may not qualify for a PPA unless the system size can be increased.

Additional Potential Financial Incentives:

Debt Service Aid - Based on the Education Facilities Construction and Financing Act signed into law in 2000, New Jersey Boards of Education are eligible for 40% debt service aid for eligible improvements to school facilities. It is anticipated that the installation of solar photovoltaic panels will be considered eligible improvements. Under this scenario the SHSD would be required to go to referendum for voter approval to gain access to debt service aid.

Clean Renewable Energy Bonds – The federal government made available $750 Million in federal income tax credit allotments in 2007-08 for local governments to support the installation of green energy generation systems including solar photovoltaic. Such allotments may provide for an interest- free loan for the issuer. The recent energy bill for 2008-09 did not include any provisions for this energy bond. However, industry experts expect some allotments will be included prior to execution of the final plan. Although there is no guarantee that SHSD will be awarded such allotments, we have included the calculation for illustration purposes. If the program is approved for 2008-09 an application will be submitted on behalf of the Somerset Hills Board of Education.

7.2 New Jersey Clean Energy Program

7.2.1 Introduction

New Jersey's Clean Energy Program (N JCEP) promotes increased energy efficiency and the use of clean, renewable sources of energy including solar, wind, geothermal, and sustainable biomass. The results for New Jersey are a stronger economy, less pollution, lower costs, and reduced demand for electricity. NJCEP offers financial incentives, programs, and services for residential, commercial, and municipal customers.

NJCEP reduces the need to generate electricity and burn natural gas which eliminates the pollution that would have been caused by such electric generation or natural gas usage. The benefits of these programs continue for the life of the measures installed, which on average is about 15 years. Thus, the public receives substantial environmental and public health benefits from programs that also lower energy bills and benefit the economy.

7.2.2 New Jersey Smart Start Program

The New Jersey Smart Start Program offers rebate incentives for several qualifying equipment such as high efficient premium motors and lighting, and lighting controls.

Incentive information and incentive calculation worksheets are provided for the various new equipment installation identified in this report and are included in Appendix G.

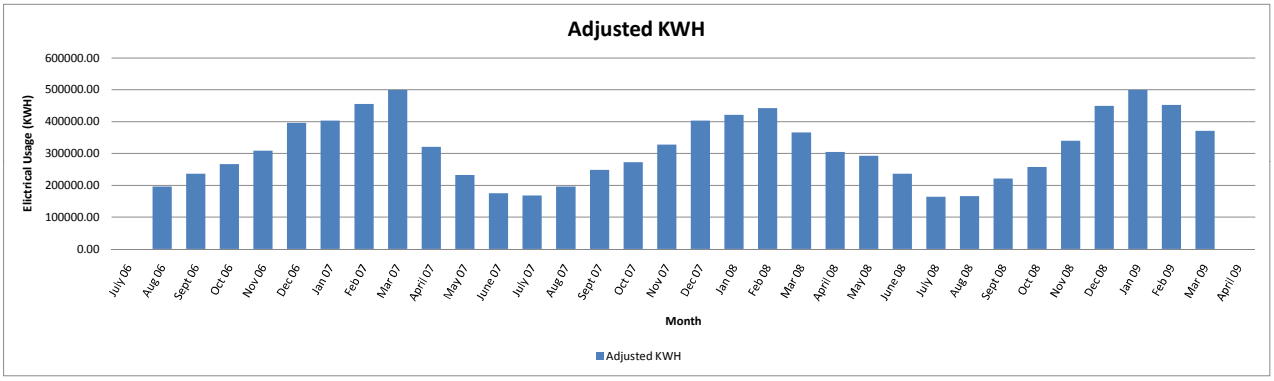
APPENDIX A

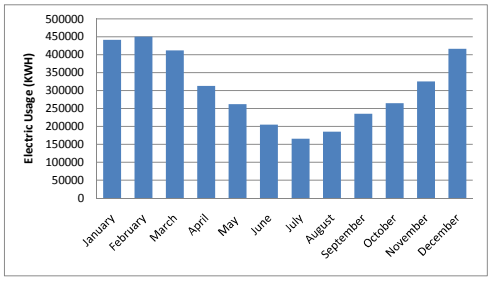
UTILITY BILL INFORMATION

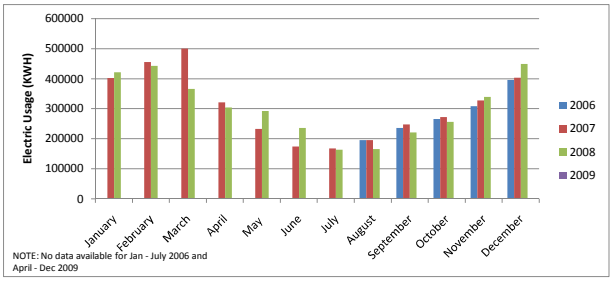
Electric Bills						
Account #: 10 00 04 6297 03--- North Hunterdon High School Main Building						
Date	Year	Total Electric Charges	KWH	Overall Cost Per KWH	Measured Demand	Cost Per KW Demand
July	2006	missing				
August	2006	$28,616.39	182553	$0.15676	619.5	$7.22
September	2006	$34,760.13	221383	$0.15701	760.5	$7.22
October	2006	$33,516.95	265223	$0.12637	790.5	$6.75
November	2006	$33,047.46	268152	$0.12324	741	$6.75
December	2006	$49,963.55	390376	$0.12799	1074	$6.75
January	2007	$55,145.51	405908	$0.13586	1117.5	$6.75
February	2007	$54,045.06	395909	$0.13651	1023	$6.75
March	2007	$73,633.10	573512	$0.12839	1294.5	$6.75
April	2007	$46,602.87	351579	$0.13255	1024.5	$6.75
May	2007	$35,842.88	259368	$0.13819	840	$6.75
June	2007	$32,196.74	179231	$0.17964	850.5	$7.22
July	2007	$29,966.67	164986	$0.18163	637.5	$7.22
August	2007	$30,869.33	173430	$0.17799	595.5	$7.22
September	2007	$43,540.10	240466	$0.18107	960	$7.22
October	2007	$39,190.47	263781	$0.14857	886.5	$6.75
November	2007	$41,849.35	288621	$0.14500	873	$6.75
December	2007	$58,248.66	405329	$0.14371	1062	$6.75
January	2008	$61,001.39	399623	$0.15265	1224	$6.75
February	2008	$68,387.68	464851	$0.14712	1168.5	$6.75
March	2008	$57,595.08	396483	$0.14526	1096.5	$6.75
April	2008	$43,666.75	303915	$0.14368	858	$6.75
May	2008	$43,658.60	304866	$0.14321	787.5	$6.75
June	2008	$48,791.48	266409	$0.18315	966	$7.22
July	2008	$31,826.31	175329	$0.18152	546	$7.22
August	2008	$26,288.47	141131	$0.18627	544.5	$7.22
September	2008	$42,081.67	214298	$0.19637	948	$7.22
October	2008	$37,191.93	235200	$0.15813	720	$6.75
November	2008	$46,891.45	300150	$0.15623	927	$6.75
December	2008	$65,279.81	418832	$0.15586	1153.5	$6.75
12/19-1/19	2008-2009	$79,739.79	509908	$0.15638	1231.5	$6.75
1/20-2/18	2009	$75,458.43	477357	$0.15808	1147.5	$6.75
2/19-3/20	2009	$64,271.58	402313	$0.15976	1104	$6.75
3/21-4/21	2009	$48,916.17	306935	$0.15937	961.5	$6.75

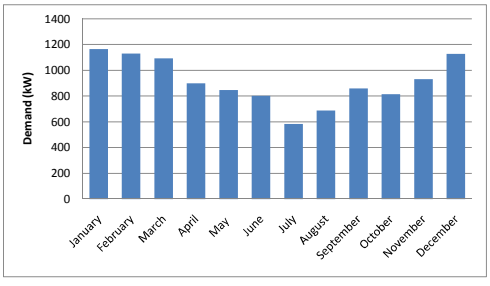
Month	Adjusted KWH	Adjusted kW
July 06		
Aug 06	195496.33	666.50
Sept 06	235996.33	770.50
Oct 06	266199.33	774.00
Nov 06	308893.33	852.00
Dec 06	395553.33	1088.50
Jan 07	402575.00	1086.00
Feb 07	455110.00	1113.50
Mar 07	499534.33	1204.50
April 07	320842.00	963.00
May 07	232655.67	843.50
June 07	174482.67	779.50
July 07	167800.67	623.50
Aug 07	195775.33	717.00
Sept 07	248237.67	935.50
Oct 07	272061.00	882.00
Nov 07	327523.67	936.00
Dec 07	403427.00	1116.00
Jan 08	421365.67	1205.50
Feb 08	442061.67	1144.50
Mar 08	365627.00	1017.00
April 08	304232.00	834.50
May 08	292047.00	847.00
June 08	236049.00	826.00
July 08	163929.67	545.50
Aug 08	165520.00	679.00
Sept 08	221265.33	872.00
Oct 08	256850.00	789.00
Nov 08	339710.67	1002.50
Dec 08	449190.67	1179.50
Jan 09	499057.67	1203.50
Feb 09	452342.33	1133.00
Mar 09	370520.33	1056.50
April 09		

Month	Average Adjusted KWH	Average Adjusted kW
January	440999.44	1165.00
February	449838.00	1130.33
March	411893.89	1092.67
April	312537.00	898.75
May	262351.33	845.25
June	205265.83	802.75
July	165865.17	584.50
August	185597.22	687.50
September	235166.44	859.33
October	265036.78	815.00
November	325375.89	930.17
December	416057.00	1128.00





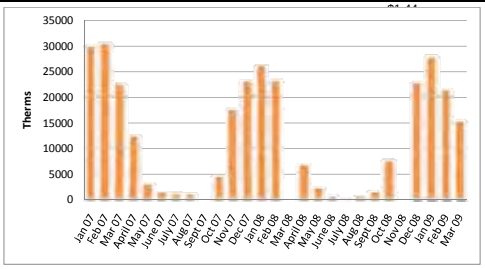


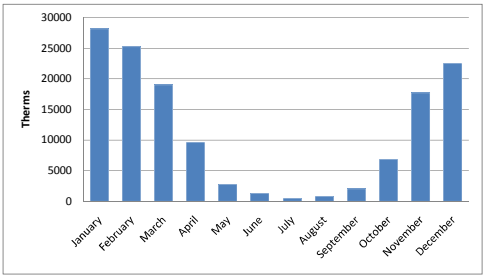


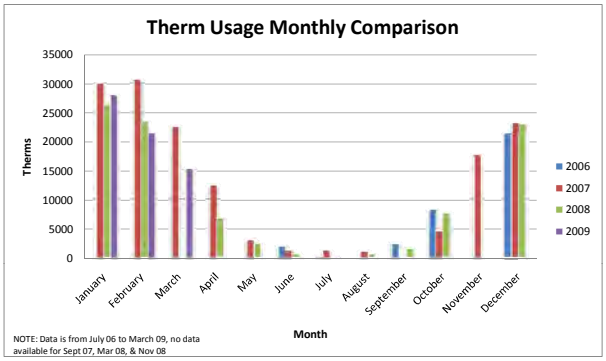
Natural Gas Bills							
Elizabethtown Gas: Account # 6583570581							Woodruff Energy Acc# 510-598
Date	Year	Therms	Total Charges	Price/Therm	Demand Therms	Demand Charge	Delivery Charges
01/01-02/01	2007	30027.4	$9,192.14	$1.52	1449	$1,173.69	$36,542.11
02/01-03/01	2007	30627.1	$8,178.28	$1.58	1449	$1,173.69	$40,067.51
03/01-04/01	2007	22613.6	$6,042.67	$1.53	1449	$1,173.69	$28,562.94
04/01-05/01	2007	12559.4	$3,363.23	$1.53	1449	$1,173.69	$15,862.49
05/01-06/01	2007	3013.4	$819.22	$1.53	1449	$1,173.69	$3,805.40
06/01-07/01	2007	1168.4	$327.53	$1.54	1449	$1,173.69	$1,474.63
07/01-08/01	2007	1120.6	$330.94	$1.56	1449	$1,173.69	$1,414.89
08/01-09/01	2007	964.4	$273.17	$1.55	1449	$1,173.69	$1,218.28
09/01-10/01	2007						
10/01-11/01	2007	4585.1	$1,216.55	$1.53	1449	$1,173.69	$5,793.98
11/01-12/01	2007	17653.4	$4,628.98	$1.53	1449	$1,173.69	$22,297.33
12/01-01/01	2007	23249.1	$6,091.13	$1.23	1449	$1,173.69	$22,596.10
01/01-02/01	2008	26246.5	$6,874.36	$1.35	1449	$1,173.69	$28,640.00
02/01-03/01	2008	23434.3	$6,139.53	$1.47	1449	$1,173.69	$28,314.27
03/01-04/01	2008						$17,464.89
04/01-05/01	2008	6665.4	$1,757.82	$1.41	1449	$1,173.69	$7,638.84
05/01-06/01	2008	2274.8	$610.56	$1.64	1449	$1,173.69	$3,117.69
06/01-07/01	2008	633.2	$181.59	$1.74	1449	$1,173.69	$919.39
07/01-08/01	2008	10.5	$18.90	$3.44	1449	$1,173.69	$17.24
08/01-09/01	2008	523.5	$150.74	$1.45	1449	$1,173.69	$607.49
09/01-10/01	2008	1495.8	$400.72	$1.30	1449	$1,173.69	$1,541.91
10/01-11/01	2008	7621.2	$2,035.13	$1.19	1449	$1,173.69	$7,021.82
11/01-12/01	2008						$13,673.58
12/01-01/01	2008	22906	$6,170.99	$1.25	1449	$1,173.69	$22,566.39
01/01-02/01	2009	28026	$7,546.73	$1.08	1449	$1,173.69	$22,831.79
02/01-03/01	2009	21455.5	$5,781.24	$0.27	1449	$1,173.69	
03/01-04/01	2009	15353.5	$4,141.64	$0.27	1449	$1,173.69	

Month	Therms Used
Jan 07	30027.4
Feb 07	30627.1
Mar 07	22613.6
April 07	12559.4
May 07	3013.4
June 07	1168.4
July 07	1120.6
Aug 07	964.4
Sept 07	
Oct 07	4585.1
Nov 07	17653.4
Dec 07	23249.1
Jan 08	26246.5
Feb 08	23434.3
Mar 08	
April 08	6665.4
May 08	2274.8
June 08	633.2
July 08	10.5
Aug 08	523.5
Sept 08	1495.8
Oct 08	7621.2
Nov 08	
Dec 08	22906
Jan 09	28026
Feb 09	21455.5
Mar 09	15353.5

Month	Average Therm
January	28099.97
February	25172.30
March	18983.55
April	9612.40
May	2644.10
June	1215.20
July	432.37
August	743.95
September	1965.90
October	6788.10
November	17653.40
December	22530.03



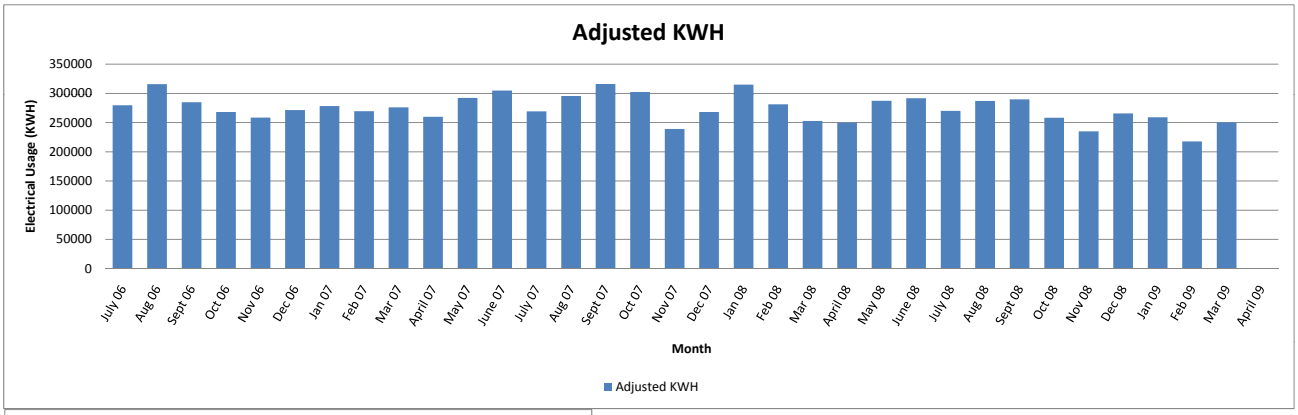


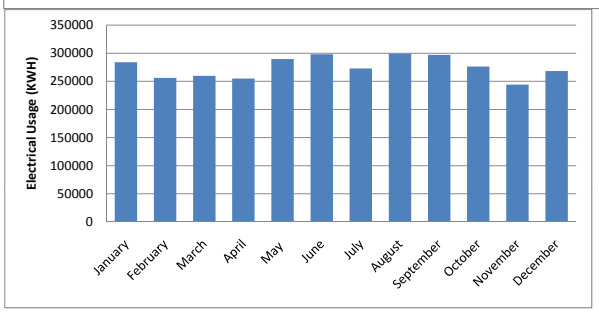


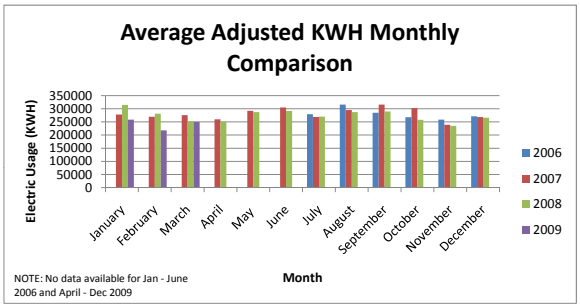
Electric Bills						
Account #: 10 00 03 8544 01--- Voorhees High School						
Date	Year	Total Electric Charges	KWH	Overall Cost Per KWH	Measured Demand	Cost Per KW Demand
July	2006	$36,138.08	255200	$0.14161	632	$6.68
August	2006	$45,222.74	328400	$0.13771	748	$7.22
September	2006	$41,666.88	290400	$0.14348	748	$7.22
October	2006	$31,172.66	274000	$0.11377	748	$3.15
November	2006	$31,175.51	256000	$0.12178	672	$6.75
December	2006	$33,767.00	263600	$0.12810	672	$6.75
January	2007	$38,179.07	287200	$0.13294	672	$6.75
February	2007	$35,122.97	260400	$0.13488	664	$6.75
March	2007	$37,666.36	287600	$0.13097	672	$6.75
April	2007	$33,212.09	252800	$0.13138	672	$6.75
May	2007	$36,481.18	274400	$0.13295	764	$6.75
June	2007	$51,616.61	327600	$0.15756	816	$7.22
July	2007	$42,471.25	259200	$0.16386	604	$7.22
August	2007	$47,057.80	289600	$0.16249	560	$7.22
September	2007	$46,643.55	307200	$0.15183	372	$7.22
October	2007	$46,330.47	334000	$0.13871	800	$6.75
November	2007	$33,737.18	239200	$0.14104	672	$6.75
December	2007	$34,991.28	238800	$0.14653	672	$6.75
January	2008	$48,829.36	326800	$0.14942	860	$6.75
February	2008	$42,328.68	291200	$0.14536	608	$6.75
March	2008	$37,426.33	261200	$0.14329	608	$6.75
April	2008	$33,389.68	236000	$0.14148	608	$6.75
May	2008	$39,699.87	278000	$0.14281	720	$6.75
June	2008	$50,865.46	305600	$0.16644	748	$7.22
July	2008	$45,839.72	264000	$0.17364	748	$7.22
August	2008	$46,842.00	282000	$0.16611	540	$7.22
September	2008	$51,034.46	297200	$0.17172	776	$7.22
October	2008	$42,254.55	274800	$0.15376	732	$6.75
November	2008	$34,133.42	225200	$0.15157	608	$6.75
December	2008	$39,939.71	254400	$0.15700	632	$6.75
12/18-1/16	2008-2009	$46,635.21	288400	$0.16170	860	$6.75
1/17-2/17	2009	$33,182.97	200037	$0.16588	596	$6.75
2/18-2/19	2009	$40,657.86	253494	$0.16039	604.8	$6.75
3/20-4/20	2009	$38,546.80	244169	$0.15787	617	$6.75

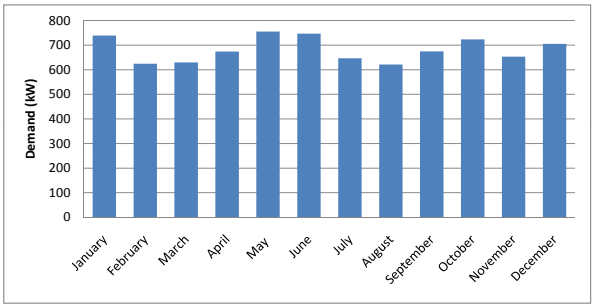
Month	Adjusted KWH	Adjust kW
July 06	279600	671
Aug 06	315733	748
Sept 06	284933	748
Oct 06	268000	723
Nov 06	258533	672
Dec 06	271467	672
Jan 07	278267	669
Feb 07	269467	667
Mar 07	276000	672
April 07	260000	703
May 07	292133	781
June 07	304800	745
July 07	269333	589
Aug 07	295467	497
Sept 07	316133	515
Oct 07	302400	757
Nov 07	239067	672
Dec 07	268133	735
Jan 08	314933	776
Feb 08	281200	608
Mar 08	252800	608
April 08	250000	645
May 08	287200	729
June 08	291733	748
July 08	270000	679
Aug 08	287067	619
Sept 08	289733	761
Oct 08	258267	691
Nov 08	234933	616
Dec 08	265733	708
Jan 09	258946	772
Feb 09	217856	599
Mar 09	250386	609
April 09		

Month	Average Adjusted KWH	Avg Adjusted kw
January	284048.56	739.11
February	256174.22	624.53
March	259728.56	629.62
April	255000.00	674.00
May	289666.67	755.33
June	298266.67	746.67
July	272977.78	646.22
August	299422.22	621.33
September	296933.33	674.67
October	276222.22	723.56
November	244177.78	653.33
December	268444.44	704.89







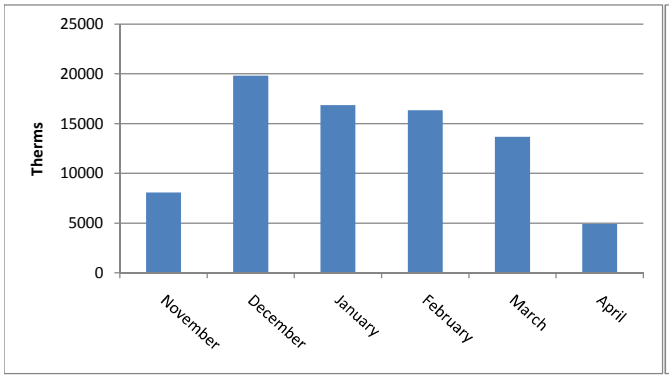


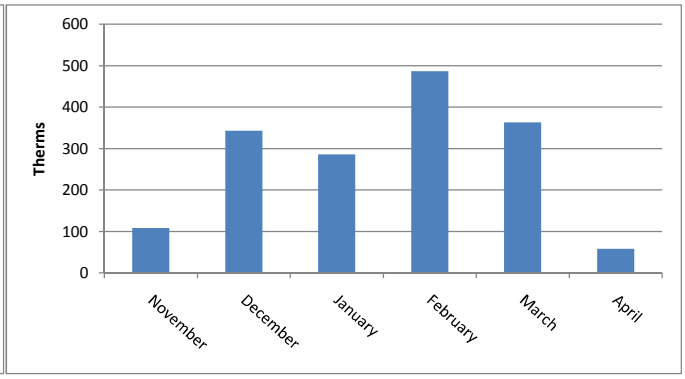
Fuel Oil				
Account #: 433240 - Voorhees High School				
Date Delivered	Year	Gallons	Total Charges	Price/Gallon
11/13	2008	2470.8	$5,030.55	$2.0360
11/24	2008	3400	$6,514.40	$1.9160
12/03	2008	3012	$5,364.37	$1.7810
12/09	2008	3092	$5,166.73	$1.6710
12/16	2008	2246.2	$3,733.19	$1.6620
12/27	2008	2020.2	$3,164.64	$1.5665
12/31	2008	4048	$6,211.66	$1.5345
01/09	2009	4006	$7,028.53	$1.7545
01/15	2009	2811.5	$4,932.78	$1.7545
01/22	2009	2661.2	$4,442.87	$1.6695
01/26	2009	2783.5	$4,793.18	$1.7220
02/03	2009	4017.8	$6,547.01	$1.6295
02/09	2009	2431	$3,979.55	$1.6370
02/20	2009	2700	$3,978.45	$1.4735
02/25	2009	2728.9	$4,007.39	$1.4685
03/05	2009	2776.6	$4,112.15	$1.4810
03/11	2009	2721.1	$3,941.51	$1.4485
03/18	2009	2800.9	$4,225.16	$1.5085
03/27	2009	1639	$2,812.53	$1.7160
04/08	2009	1802.3	$2,919.72	$1.6200
04/22	2009	1782.5	$2,816.35	$1.5800

Month	BTU	therms	$/therm
November	807,235,000	8072.35	$1.43
December	1,982,530,000	19825.3	$1.19
January	1,686,052,500	16860.525	$1.26
February	1,633,183,750	16331.8375	$1.13
March	1,366,420,000	13664.2	$0.90
April	492,910,000	4929.1	$1.16

Fuel Oil				
Account #: 433241 - Voorhees High School				
Date Delivered	Year	Gallons	Total Charges	Price/Gallon
11/13	2008	78.9	$160.64	$2.0360
12/16	2008	89	$147.92	$1.6620
12/27	2008	160.1	$250.80	$1.5665
01/15	2009	88.4	$155.10	$1.7545
01/22	2009	119.4	$199.34	$1.6695
02/05	2009	137.1	$220.67	$1.6096
02/20	2009	140	$206.29	$1.4735
02/25	2009	76.6	$112.49	$1.4685
03/05	2009	105	$155.51	$1.4810
03/11	2009	27.2	$39.40	$1.4485
03/27	2009	132	$226.51	$1.7160
04/08	2009	42	$68.04	$1.6200

Month	BTU	therms	$/therm
November	10,848,750	108.4875	$1.48
December	34,251,250	342.5125	$1.16
January	28,572,500	285.725	$1.24
February	48,633,750	486.3375	$1.11
March	36,327,500	363.275	$1.16
April	5,775,000	57.75	$1.18

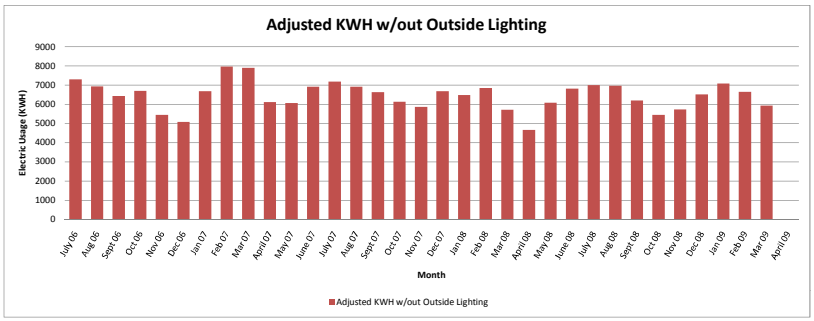


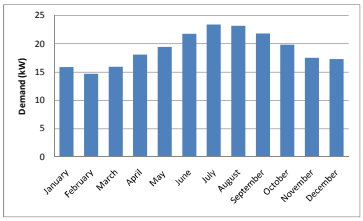


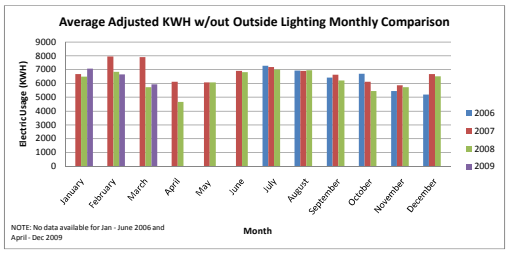
Electric Bills											
Account #: 10 00 03 6880 07--- Dist Admin Building							Outdoor Lighting Service		Totals		
Date	Year	Electric Charges	KWH	Overall Cost Per KWH	Measured Demand	Cost Per KW Demand	Monthly Lighting Fixture Charges	KWH	Total Electric Charges	KWH	Corrected Overall Cost Per KWH
July	2006	$1,350.17	7144	$0.18899	20.6	$6.88	$221.34	1820	$1,571.51	8964	$0.17531
August	2006	$1,347.37	7442	$0.18105	28.7	$3.16	$223.31	1820	$1,570.68	9262	$0.16958
September	2006	$1,238.03	6424	$0.19272	17.3	$6.94	$223.44	1820	$1,461.47	8244	$0.17728
October	2006	$1,097.22	6429	$0.17067	22.2	$6.47	$223.44	1820	$1,320.66	8249	$0.16010
November	2006	$1,139.86	6973	$0.16347	20.5	$6.47	$223.44	1820	$1,363.30	8793	$0.15504
December	2006	$829.29	3911	$0.21204	16.7	$6.47	$223.44	1820	$1,052.73	5731	$0.18369
January	2007	$1,150.38	6258	$0.18383	16	$6.47	$223.44	1820	$1,373.82	8078	$0.17007
February	2007	$1,253.74	7114	$0.17624	16.4	$6.47	$223.44	1820	$1,477.18	8934	$0.16534
March	2007	$1,428.70	8819	$0.16200	16.1	$6.47	$223.44	1820	$1,652.14	10639	$0.15529
April	2007	$1,206.60	6988	$0.17267	17.2	$6.47	$223.44	1820	$1,430.04	8808	$0.16236
May	2007	$1,017.45	5252	$0.19373	17.5	$6.47	$223.44	1820	$1,240.89	7072	$0.17547
June	2007	$1,465.69	6896	$0.21254	21.7	$6.94	$223.44	1820	$1,689.13	8716	$0.19380
July	2007	$1,607.82	6947	$0.23144	26.2	$6.94	$223.44	1820	$1,831.26	8767	$0.20888
August	2007	$1,681.16	7430	$0.22627	26.2	$6.94	$223.44	1820	$1,904.60	9250	$0.20590
September	2007	$1,496.02	6389	$0.23416	26.2	$6.94	$223.44	1820	$1,719.46	8209	$0.20946
October	2007	$1,365.74	6875	$0.19865	26.6	$6.47	$223.44	1820	$1,589.18	8695	$0.18277
November	2007	$1,124.06	5393	$0.20843	16.9	$6.47	$223.44	1820	$1,347.50	7213	$0.18682
December	2007	$1,283.12	6342	$0.20232	19.4	$6.47	$223.44	1820	$1,506.56	8162	$0.18458
January	2008	$1,454.36	7036	$0.20670	21.8	$6.47	$223.44	1820	$1,677.80	8856	$0.18945
February	2008	$1,254.90	5943	$0.21116	14.4	$6.47	$223.44	1820	$1,478.34	7763	$0.19043
March	2008	$1,480.12	7750	$0.19098	16.1	$6.47	$223.44	1820	$1,703.56	9570	$0.17801
April	2008	$940.42	3689	$0.25493	18.8	$6.47	$223.44	1820	$1,163.86	5509	$0.21127
May	2008	$1,190.09	5658	$0.21034	19	$6.47	$223.44	1820	$1,413.53	7478	$0.18903
June	2008	$1,492.92	6514	$0.22919	19.6	$6.94	$223.44	1820	$1,716.36	8334	$0.20595
July	2008	$1,658.68	7104	$0.23349	19.6	$6.94	$223.44	1820	$1,882.12	8924	$0.21091
August	2008	$1,624.34	6911	$0.23504	19.1	$6.94	$223.44	1820	$1,847.78	8731	$0.21163
September	2008	$1,639.48	7007	$0.23398	21.8	$6.94	$223.44	1820	$1,862.92	8827	$0.21105
October	2008	$1,209.78	5409	$0.22366	17	$6.47	$223.44	1820	$1,433.22	7229	$0.19826
November	2008	$1,216.92	5487	$0.22178	15.8	$6.47	$223.44	1820	$1,440.36	7307	$0.19712
December	2008	$1,310.20	5987	$0.21884	15.8	$6.47	$223.44	1820	$1,533.64	7807	$0.19644
12/13-1/14	2008-2009	$1,493.05	7063	$0.21139	14.3	$6.47	$223.44	1820	$1,716.49	8883	$0.19323
1/15-2/12	2009	$1,492.50	7105	$0.21006	12.6	$6.47	$223.44	1820	$1,715.94	8925	$0.19226
2/13-3/13	2009	$1,348.52	6203	$0.21740	12.8	$6.47	$223.44	1820	$1,571.96	8023	$0.19593
3/14-4/13	2009	$1,266.93	5653	$0.22412	14.8	$6.47	$223.44	1820	$1,490.37	7473	$0.19943

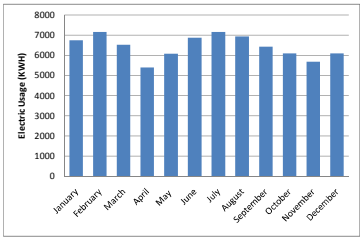
Month	Adjusted KWH w/out Outside Lighting	Adjusted kW
July 06	7293	24.65
Aug 06	6933	23
Sept 06	6426.5	19.75
Oct 06	6701	21.35
Nov 06	5442	18.6
Dec 06	5084.5	16.35
Jan 07	6686	16.2
Feb 07	7966.5	16.25
Mar 07	7903.5	16.65
April 07	6120	17.35
May 07	6074	19.6
June 07	6921.5	23.95
July 07	7188.5	26.2
Aug 07	6909.5	26.2
Sept 07	6632	26.4
Oct 07	6134	21.75
Nov 07	5867.5	18.15
Dec 07	6689	20.6
Jan 08	6489.5	18.1
Feb 08	6846.5	15.25
Mar 08	5719.5	17.45
April 08	4673.5	18.9
May 08	6086	19.3
June 08	6809	19.6
July 08	7007.5	19.35
Aug 08	6959	20.45
Sept 08	6208	19.4
Oct 08	5448	16.4
Nov 08	5737	15.8
Dec 08	6525	15.05
Jan 09	7084	13.45
Feb 09	6654	12.7
Mar 09	5928	13.8
April 09		

Month	Average Adjusted KWH w/out Outside Lighting	Ave Adjusted kW
January	6753.17	15.92
February	7155.67	14.73
March	6517.00	15.97
April	5396.75	18.13
May	6080.00	19.45
June	6865.25	21.78
July	7163.00	23.40
August	6933.83	23.22
September	6422.17	21.85
October	6094.33	19.83
November	5682.17	17.52
December	6099.50	17.33



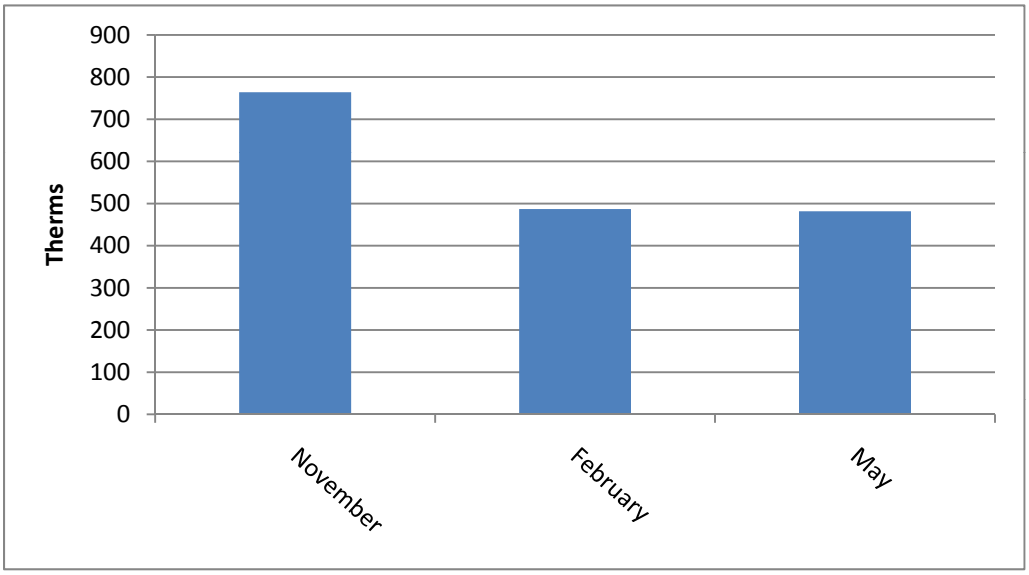






Fuel Oil				
Account #: 433255 **Admin Building**				
Date Delivered	**Year**	**Gallons**	**Total Charges**	**Price/Gallon**
12/04	2008	555.6	$989.53	$1.7810
02/10	2009	354.1	$579.66	$1.6370
05/11	2009	350.2	$598.32	$1.7085

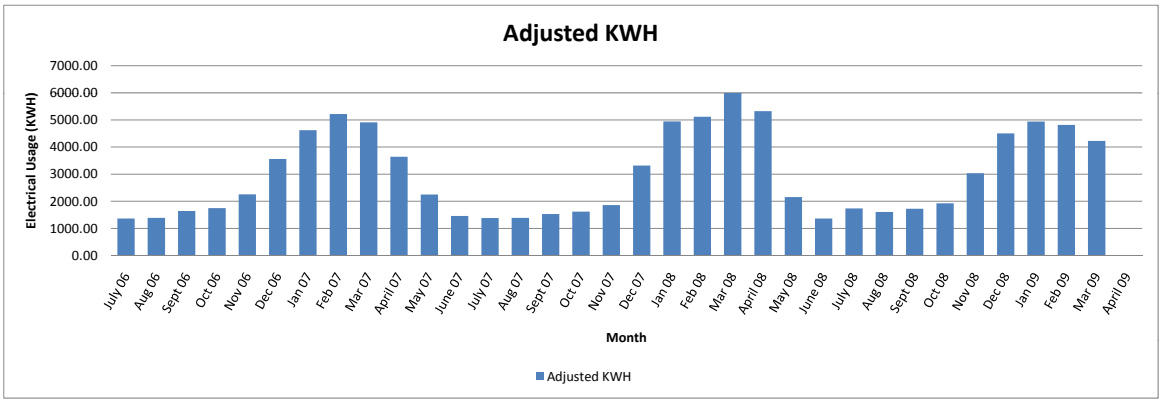
Month	BTU	Therms	$/therm
November	76395000	763.95	$1.30
February	48688750	486.8875	$1.19
May	48152500	481.525	$1.24

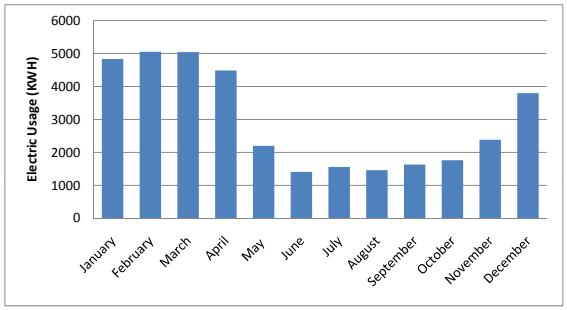


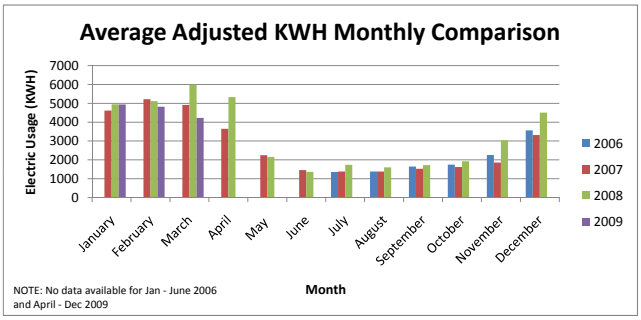
Electric Bills						
Account #: 10 00 03 6877 10 - Facilities & Tech Office (Butler Building)						
Date	Year	Total Electric Charges	KWH	Overall Cost Per KWH	Measured Demand	Cost Per KW Demand
July	2006	$239.79	1374	$0.17452	3	$3.13
August	2006	$238.70	1348	$0.17708	3	$3.16
September	2006	$246.26	1424	$0.17294	3	$3.16
October	2006	$252.12	1863	$0.13533	3	$3.16
November	2006	$228.72	1626	$0.14066	1.6	$6.47
December	2006	$365.27	2880	$0.12683	1.6	$6.47
January	2007	$545.07	4242	$0.12849	1.8	$3.16
February	2007	$639.63	4998	$0.12798	1.9	$6.47
March	2007	$686.25	5435	$0.12626	2.8	$6.47
April	2007	$550.33	4382	$0.12559	1.9	$6.47
May	2007	$384.51	2907	$0.13227	2.8	$3.16
June	2007	$291.90	1589	$0.18370	2.8	$3.16
July	2007	$270.03	1323	$0.20410	2.8	$3.16
August	2007	$287.65	1439	$0.19990	2.8	$3.16
September	2007	$267.42	1334	$0.20046	2.8	$3.16
October	2007	$276.48	1723	$0.16046	2.8	$3.16
November	2007	$251.49	1514	$0.16611	2.8	$3.16
December	2007	$344.94	2201	$0.15672	2.8	$3.16
January	2008	$659.35	4430	$0.14884	2.8	$3.16
February	2008	$794.74	5462	$0.14550	2.8	$3.16
March	2008	$698.66	4776	$0.14629	2.8	$6.47
April	2008	$983.30	7205	$0.13647	2.9	$6.47
May	2008	$499.38	3445	$0.14496	2.9	$3.16
June	2008	$191.41	858	$0.22309	2.9	$3.16
July	2008	$368.41	1867	$0.19733	2.9	$3.16
August	2008	$327.10	1609	$0.20329	2.9	$3.16
September	2008	$322.38	1601	$0.20136	2.9	$3.16
October	2008	$316.01	1848	$0.17100	2.9	$3.16
November	2008	$337.65	1998	$0.16899	2.9	$3.16
December	2008	$634.34	4075	$0.15567	2.9	$3.16
12/13-1/14	2008-2009	$778.58	4936	$0.15774	2.9	$3.16
1/15-2/12	2009	$785.76	4947	$0.15884	1.8	$6.47
2/13-3/13	2009	$737.54	4688	$0.15733	2.9	$3.16
3/14-4/13	2009	$593.29	3763	$0.15766	1.8	$3.16

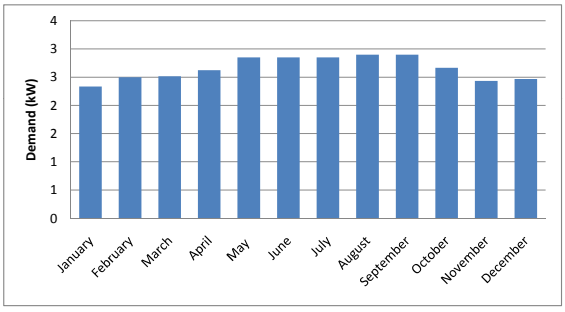
Month	Adjusted KWH	Adjusted kW
July 06	1361.00	3.00
Aug 06	1386.00	3.00
Sept 06	1643.50	3.00
Oct 06	1744.50	2.30
Nov 06	2253.00	1.60
Dec 06	3561.00	1.70
Jan 07	4620.00	1.85
Feb 07	5216.50	2.35
Mar 07	4908.50	2.35
April 07	3644.50	2.35
May 07	2248.00	2.80
June 07	1456.00	2.80
July 07	1381.00	2.80
Aug 07	1386.50	2.80
Sept 07	1528.50	2.80
Oct 07	1618.50	2.80
Nov 07	1857.50	2.80
Dec 07	3315.50	2.80
Jan 08	4946.00	2.80
Feb 08	5119.00	2.80
Mar 08	5990.50	2.85
April 08	5325.00	2.90
May 08	2151.50	2.90
June 08	1362.50	2.90
July 08	1738.00	2.90
Aug 08	1605.00	2.90
Sept 08	1724.50	2.90
Oct 08	1923.00	2.90
Nov 08	3036.50	2.90
Dec 08	4505.50	2.90
Jan 09	4941.50	2.35
Feb 09	4817.50	2.35
Mar 09	4225.50	2.35
April 09		

Month	Average Adjusted KWH	Ave adjusted kW
January	4835.83	2.33
February	5051.00	2.50
March	5041.50	2.52
April	4484.75	2.63
May	2199.75	2.85
June	1409.25	2.85
July	1559.50	2.85
August	1459.17	2.90
September	1632.17	2.90
October	1762.00	2.67
November	2382.33	2.43
December	3794.00	2.47





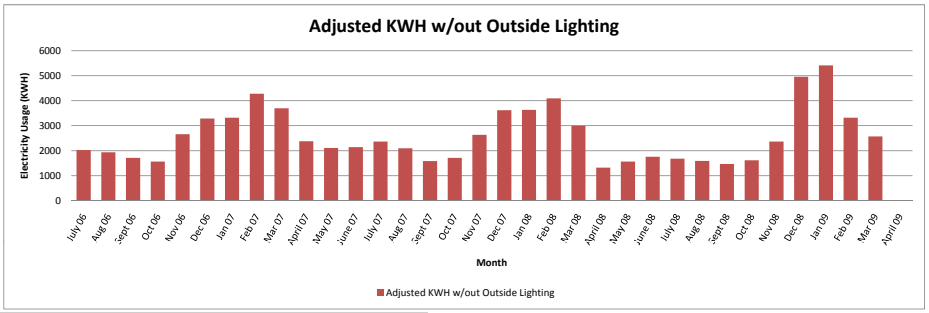


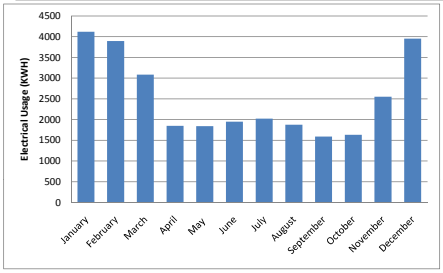


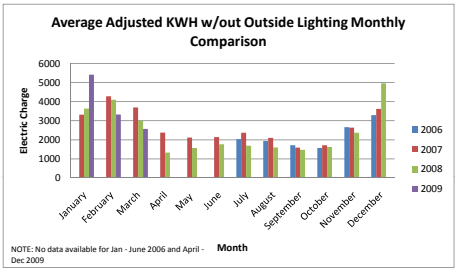
Electric Bills											
Account #: 100003687884 - N.Hunterdon H.S. Maintenance Garage (Dist Trans Bldg)							Outdoor Lighting Service		Totals		
Date	Year	Electric Charges	KWH	Overall Cost Per KWH	Measured Demand	Cost Per KW Demand	Lighting Fixture Charges	KWH	Total Electric Charges	KWH	Corrected Overall Cost Per KWH
July	2006	$408.21	2015	$0.20259	4.9	$3.13	$80.94	577	$489.15	2592	$0.18872
August	2006	$414.94	2039	$0.20350	4.9	$3.16	$81.66	577	$496.60	2616	$0.18983
September	2006	$385.72	1832	$0.21055	4.9	$3.16	$81.71	577	$467.43	2409	$0.19403
October	2006	$311.65	1598	$0.19503	4.9	$3.16	$81.71	577	$393.36	2175	$0.18086
November	2006	$305.09	1535	$0.19876	4.9	$3.16	$81.71	577	$386.80	2112	$0.18314
December	2006	$539.68	3785	$0.14258	2.7	$3.16	$81.71	577	$621.39	4362	$0.14246
January	2007	$465.95	2793	$0.16683	1.2	$3.16	$81.71	577	$547.66	3370	$0.16251
February	2007	$606.64	3842	$0.15790	3.6	$6.47	$81.71	577	$688.35	4419	$0.15577
March	2007	$701.55	4711	$0.14892	4.3	$6.47	$81.71	577	$783.26	5288	$0.14812
April	2007	$450.22	2682	$0.16787	4.3	$3.16	$81.71	577	$531.93	3259	$0.16322
May	2007	$382.96	2071	$0.18492	4.3	$3.16	$81.71	577	$464.67	2648	$0.17548
June	2007	$467.46	2156	$0.21682	4.3	$3.16	$81.71	577	$549.17	2733	$0.20094
July	2007	$495.11	2125	$0.23299	4.3	$3.16	$81.71	577	$576.82	2702	$0.21348
August	2007	$567.84	2604	$0.21806	4.3	$3.16	$81.71	577	$649.55	3181	$0.20420
September	2007	$407.87	1598	$0.25524	4.3	$3.16	$81.71	577	$489.58	2175	$0.22509
October	2007	$355.28	1572	$0.22601	4.3	$3.16	$81.71	577	$436.99	2149	$0.20335
November	2007	$391.36	1856	$0.21086	4.3	$3.16	$81.71	577	$473.07	2433	$0.19444
December	2007	$596.06	3414	$0.17459	4.3	$3.16	$81.71	577	$677.77	3991	$0.16982
January	2008	$685.37	3825	$0.17918	2.6	$6.47	$81.71	577	$767.08	4402	$0.17426
February	2008	$649.67	3443	$0.18869	5.4	$6.47	$81.71	577	$731.38	4020	$0.18194
March	2008	$722.26	4740	$0.15238	4.3	$6.47	$81.71	577	$803.97	5317	$0.15121
April	2008	$352.90	1254	$0.28142	6.9	$6.47	$81.71	577	$434.61	1831	$0.23736
May	2008	$348.08	1397	$0.24916	6.9	$3.16	$81.71	577	$429.79	1974	$0.21773
June	2008	$443.89	1740	$0.25511	6.9	$3.16	$81.71	577	$525.60	2317	$0.22685
July	2008	$470.44	1782	$0.26400	6.9	$3.16	$81.71	577	$552.15	2359	$0.23406
August	2008	$438.81	1586	$0.27668	6.9	$3.16	$81.71	577	$520.52	2163	$0.24065
September	2008	$436.60	1600	$0.27288	6.9	$3.16	$81.71	577	$518.31	2177	$0.23808
October	2008	$358.22	1345	$0.26633	6.9	$3.16	$81.71	577	$439.93	1922	$0.22889
November	2008	$433.35	1887	$0.22965	6.9	$3.16	$81.71	577	$515.06	2464	$0.20903
December	2008	$584.97	2849	$0.20532	4.8	$6.47	$81.71	577	$666.68	3426	$0.19459
12/13-1/14	2008-2009	$736.49	7063	$0.10427	6.9	$3.16	$81.71	577	$818.20	7640	$0.10709
1/15-2/12	2009	$729.46	3764	$0.19380	3.8	$6.47	$81.71	577	$811.17	4341	$0.18686
2/13-3/13	2009	$591.31	2874	$0.20574	6.9	$3.16	$81.71	577	$673.02	3451	$0.19502
3/14-4/13	2009	$491.33	2265	$0.21692	4.8	$3.16	$81.71	577	$573.04	2842	$0.20163

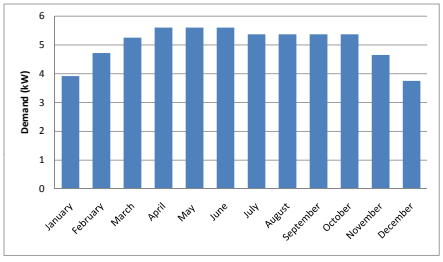
Month	Adjusted KWH w/out Outside Lighting	Adjusted kW
July 06	2027	4.9
Aug 06	1935.5	4.9
Sept 06	1715	4.9
Oct 06	1566.5	4.9
Nov 06	2660	3.8
Dec 06	3289	1.95
Jan 07	3317.5	2.4
Feb 07	4276.5	3.95
Mar 07	3696.5	4.3
April 07	2376.5	4.3
May 07	2113.5	4.3
June 07	2140.5	4.3
July 07	2364.5	4.3
Aug 07	2101	4.3
Sept 07	1585	4.3
Oct 07	1714	4.3
Nov 07	2635	4.3
Dec 07	3619.5	3.45
Jan 08	3634	4
Feb 08	4091.5	4.85
Mar 08	2997	5.6
April 08	1325.5	6.9
May 08	1568.5	6.9
June 08	1761	6.9
July 08	1684	6.9
Aug 08	1593	6.9
Sept 08	1472.5	6.9
Oct 08	1616	6.9
Nov 08	2368	5.85
Dec 08	4956	5.85
Jan 09	5413.5	5.35
Feb 09	3319	5.35
Mar 09	2569.5	5.85
April 09		

Month	Average Adjusted KWH w/out Outside Lighting	Ave adjusted kW
January	4121.67	3.92
February	3895.67	4.72
March	3087.67	5.25
April	1851.00	5.60
May	1841.00	5.60
June	1950.75	5.60
July	2025.17	5.37
August	1876.50	5.37
September	1590.83	5.37
October	1632.17	5.37
November	2554.33	4.65
December	3954.83	3.75



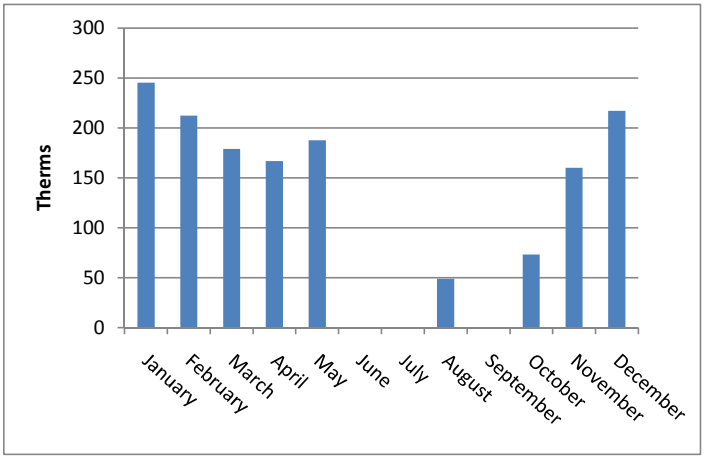






Propane Bills - N.Hunterdon H.S. Maintenance Garage						
Account #: 7510003357						
Date	Year	Gallons Delivered	Total Charges	Price/Gallon	therms	$/therm
8/24/2006	2006	51.3	$109.00	$2.12	48.7	$2.24
10/25/2006	2006	160.0	$326.29	$2.04	152.0	$2.15
11/21/2006	2006	205.9	$418.28	$2.03	195.6	$2.14
12/8/2006	2006	234.9	$490.50	$2.09	223.2	$2.20
1/11/2007	2007	398.7	$879.59	$2.21	378.8	$2.32
1/25/2007	2007	258.7	$573.13	$2.22	245.8	$2.33
2/3/2007	2007	228.4	$596.81	$2.61	217.0	$2.75
2/8/2007	2007	203.2	$451.64	$2.22	193.0	$2.34
2/17/2007	2007	129.6	$290.53	$2.24	123.1	$2.36
2/24/2007	2007	274.8	$635.86	$2.31	261.1	$2.44
3/3/2009	2007	116.3	$273.05	$2.35	110.5	$2.47
3/10/2007	2007	144.5	$337.60	$2.34	137.3	$2.46
3/27/2007	2007	153.8	$381.96	$2.48	146.1	$2.61
4/19/2007	2007	226.6	$582.18	$2.57	215.3	$2.70
10/25/2007	2007	23.2	$65.84	$2.84	22.0	$2.99
11/13/2007	2007	158.2	$465.14	$2.94	150.3	$3.09
11/28/2007	2007	183.9	$539.48	$2.93	174.7	$3.09
12/6/2007	2007	116.7	$345.34	$2.96	110.9	$3.11
12/19/2007	2007	240.4	$702.91	$2.92	228.4	$3.08
1/3/2008	2008	260.6	$761.26	$2.92	247.6	$3.07
1/12/2008	2008	116.0	$343.51	$2.96	110.2	$3.12
1/23/2008	2008	196.6	$576.48	$2.93	186.8	$3.09
2/6/2008	2008	255.3	$746.06	$2.92	242.5	$3.08
2/19/2008	2008	272.9	$797.33	$2.92	259.3	$3.08
2/29/2008	2008	205.5	$602.61	$2.93	195.2	$3.09
3/6/2008	2008	126.4	$374.09	$2.96	120.1	$3.12
3/24/2008	2008	286.1	$835.42	$2.92	271.8	$3.07
5/12/2008	2008	197.5	$580.06	$2.94	187.6	$3.09
12/14/2008	2008	77.6	$166.62	$2.15	73.7	$2.26
10/17/2008	2008	47.3	$154.52	$3.27	44.9	$3.44
11/3/2008	2008	161.9	$502.79	$3.11	153.8	$3.27
11/19/2008	2008	132.6	$413.76	$3.12	126.0	$3.28
12/11/2008	2008	395.8	$1,212.60	$3.06	376.0	$3.22
12/13/2008	2008	53.9	$173.56	$3.22	51.2	$3.39
12/27/2008	2008	329.2	$1,010.20	$3.07	312.7	$3.23
1/8/2009	2009	207.1	$639.14	$3.09	196.7	$3.25
1/23/2009	2009	368.5	$1,158.42	$3.14	350.1	$3.31
2/5/2009	2009	133.8	$426.39	$3.19	127.1	$3.35
2/14/2009	2009	337.0	$1,059.92	$3.15	320.2	$3.31
2/27/2009	2009	243.9	$740.28	$3.04	231.7	$3.19
3/20/2009	2009	302.6	$916.30	$3.03	287.5	$3.19
4/2/2009	2009	156.0	$468.84	$3.01	148.2	$3.16
4/16/2009	2009	143.7	$425.22	$2.96	136.5	$3.11

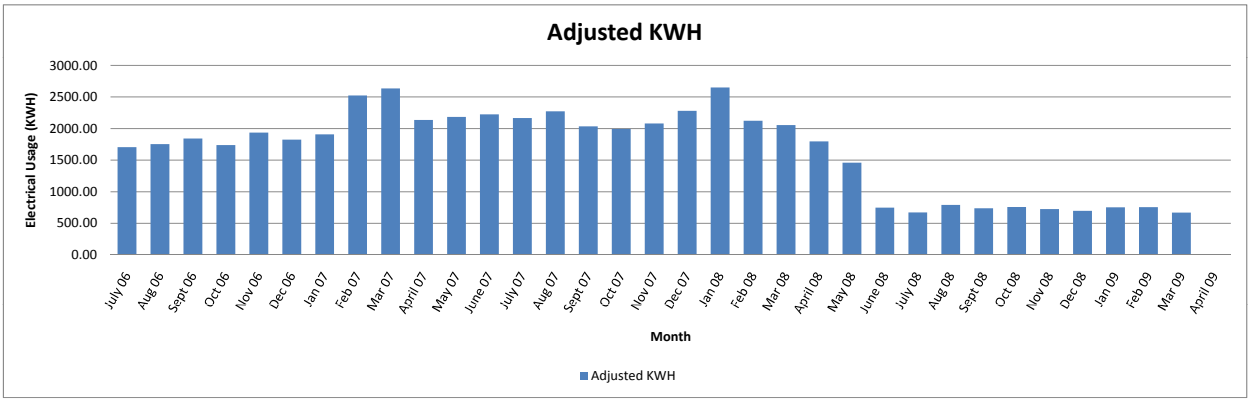
	average monthly therms
January	245.1
February	212.1
March	178.9
April	166.7
May	187.6
June	
July	
August	48.7
September	
October	73.0
November	160.1
December	217.1

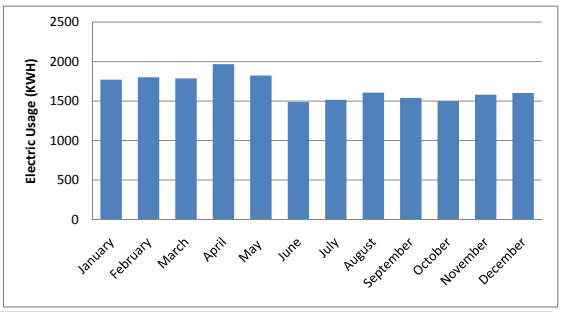


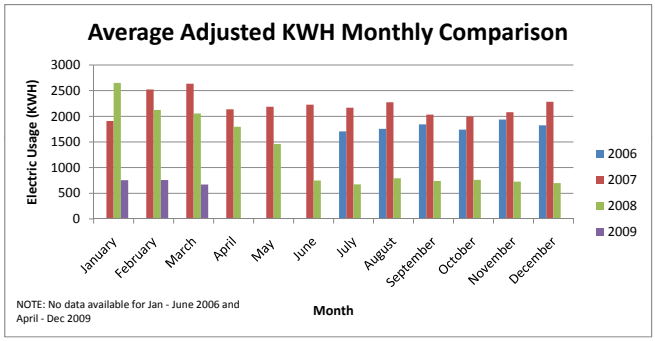
Electric Bills						
Account #: 10 00 03 8544 43 - Voorhees High School Maintenance Garage						
Date	Year	Total Electric Charges	KWH	Overall Cost Per KWH	Measured Demand	Cost Per KW Demand
July	2006	$283.35	1730	$0.16379	5.8	$0.00
August	2006	$276.32	1656	$0.16686	6.8	$0.00
September	2006	$309.21	1951	$0.15849	7.1	$0.00
October	2006	$227.64	1630	$0.13966	7.1	$0.00
November	2006	$260.10	1957	$0.13291	7.1	$0.00
December	2006	$265.14	1893	$0.14006	5.6	$0.00
January	2007	$257.02	1691	$0.15199	4.8	$0.00
February	2007	$332.00	2346	$0.14152	8	$0.00
March	2007	$386.11	2881	$0.13402	7.4	$0.00
April	2007	$300.08	2144	$0.13996	7.6	$0.00
May	2007	$297.99	2125	$0.14023	7	$0.00
June	2007	$415.24	2304	$0.18023	2.3	$6.94
July	2007	$390.29	2070	$0.18855	2.3	$3.16
August	2007	$434.91	2364	$0.18397	2.3	$3.16
September	2007	$381.79	2091	$0.18259	2.3	$3.16
October	2007	$308.08	1922	$0.16029	2.3	$3.16
November	2007	$336.00	2143	$0.15679	2.3	$3.16
December	2007	$323.28	1958	$0.16511	2.3	$3.16
January	2008	$464.23	2929	$0.15849	2.3	$3.16
February	2008	$351.42	2095	$0.16774	2.3	$3.16
March	2008	$353.41	2179	$0.16219	2.3	$3.16
April	2008	$299.15	1806	$0.16564	2.3	$3.16
May	2008	$295.73	1779	$0.16623	2.3	$3.16
June	2008	$185.59	825	$0.22496	6.1	$0.00
July	2008	$141.74	599	$0.23663	3.4	$0.00
August	2008	$191.04	826	$0.23128	6.9	$0.00
September	2008	$176.06	727	$0.24217	1.3	$6.94
October	2008	$160.26	767	$0.20894	1.3	$3.16
November	2008	$157.02	747	$0.21020	1.3	$3.16
December	2008	$148.13	684	$0.21656	1.3	$3.16
12/18-1/16	2008-2009	$159.68	730	$0.21874	1.3	$3.16
1/17-2/18	2009	$173.87	800	$0.21734	1.3	$3.16
2/19-3/19	2009	$146.29	669	$0.21867	1.3	$3.16
3/20-4/20	2009	$146.94	677	$0.21705	1.3	$3.16

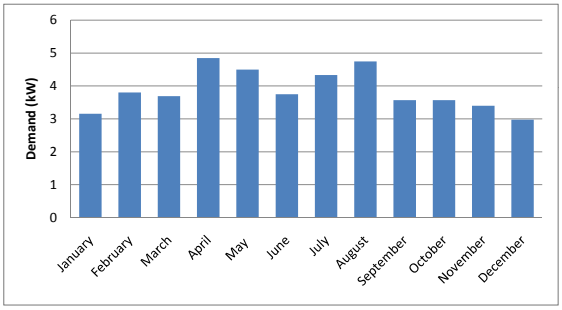
Month	Adjusted KWH	Adjusted kw
July 06	1705.33	6.13
Aug 06	1754.33	6.90
Sept 06	1844.00	7.10
Oct 06	1739.00	7.10
Nov 06	1935.67	6.60
Dec 06	1825.67	5.33
Jan 07	1909.33	5.87
Feb 07	2524.33	7.80
Mar 07	2635.33	7.47
April 07	2137.67	7.40
May 07	2184.67	5.43
June 07	2226.00	2.30
July 07	2168.00	2.30
Aug 07	2273.00	2.30
Sept 07	2034.67	2.30
Oct 07	1995.67	2.30
Nov 07	2081.33	2.30
Dec 07	2281.67	2.30
Jan 08	2651.00	2.30
Feb 08	2123.00	2.30
Mar 08	2054.67	2.30
April 08	1797.00	2.30
May 08	1461.00	3.57
June 08	749.67	5.20
July 08	674.67	4.57
Aug 08	793.00	5.03
Sept 08	740.33	1.30
Oct 08	760.33	1.30
Nov 08	726.00	1.30
Dec 08	699.33	1.30
Jan 09	753.33	1.30
Feb 09	756.33	1.30
Mar 09	671.67	1.30
April 09		

Month	Average Adjusted KWH	Ave adjusted kW
January	1771.22	3.16
February	1801.22	3.80
March	1787.22	3.69
April	1967.33	4.85
May	1822.83	4.50
June	1487.83	3.75
July	1516.00	4.33
August	1606.78	4.74
September	1539.67	3.57
October	1498.33	3.57
November	1581.00	3.40
December	1602.22	2.98



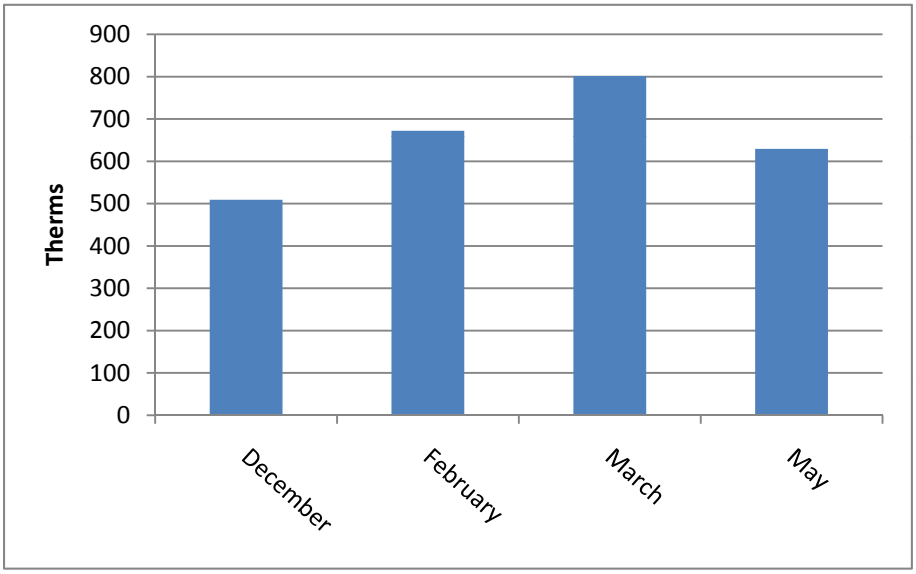






Fuel Oil				
Account #: 433256 Maintenance Garage (Field House)				
Date Delivered	Year	Gallons	Total Charges	Price/Gallon
12/14	2008	370.4	$659.68	$1.78
02/10	2009	488.7	$800.00	$1.64
03/16	2009	582.8	$841.27	$1.44
05/11	2009	457.7	$781.98	$1.71

Month	Therms	$/therm
December	509.3	$1.30
February	671.9625	$1.19
March	801.35	$1.05
May	629.3375	$1.24



APPENDIX B

STATEMENT OF ENERGY PERFORMANCE SUMMARY SHEETS

PORTFOLIO MANAGER REFERENCE GUIDE

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
North Hunterdon High School

Building ID: 1769815
For 12-month Period Ending: March 31, 2009[1]
Date SEP becomes ineligible: N/A

Date SEP Generated: July 10, 2009

Facility
North Hunterdon High School
1445 State Route 31
Annandale, NJ 08801

Facility Owner
North Hunterdon Voorhees Regional HS District
1445 State Route 31
Annandale, NJ 08801

Primary Contact for this Facility
Susan Press
1445 State Route 31
Annandale, NJ 08801

Year Built: 1950
Gross Floor Area (ft²): 284,219

Energy Performance Rating[2] (1-100) 43

Site Energy Use Summary[3]	
Electricity (kBtu)	12,752,597
Natural Gas (kBtu)[4]	10,852,140
Total Energy (kBtu)	23,604,737

Energy Intensity[5]	
Site (kBtu/ft²/yr)	83
Source (kBtu/ft²/yr)	190

Emissions (based on site energy use)	
Greenhouse Gas Emissions ($MtCO_2e$/year)	2,519

Electric Distribution Utility
Jersey Central Power & Lt Co

National Average Comparison	
National Average Site EUI	78
National Average Source EUI	179
% Difference from National Average Source EUI	6%
Building Type	K-12 School

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Certifying Professional
Matthew Goss
15 British American Blvd
Latham, NY 12110

Meets Industry Standards[6] **for Indoor Environmental Conditions:**	
Ventilation for Acceptable Indoor Air Quality	**N/A**
Acceptable Thermal Environmental Conditions	**N/A**
Adequate Illumination	**N/A**

Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE in double-checking the information that the building owner or operator has entered into Portfolio Manager.

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.
NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Building Name	North Hunterdon High School	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	K-12 School	Is this an accurate description of the space in question?		☐
Location	1445 State Route 31, Annandale, NJ 08801	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of acute care or children's hospitals) nor can they be submitted as representing only a portion of a building		☐

North Hunterdon Main Building (K-12 School)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	284,219 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		☐
Open Weekends?	Yes	Is this building normally open at all on the weekends? This includes activities beyond the work conducted by maintenance, cleaning, and security personnel. Weekend activity could include any time when the space is used for classes, performances or other school or community activities. If the building is open on the weekend as part of the standard schedule during one or more seasons, the building should select ?yes? for open weekends. The ?yes? response should apply whether the building is open for one or both of the weekend days.		☐
Number of PCs	773	Is this the number of personal computers in the K12 School?		☐
Number of walk-in refrigeration/freezer units	3	Is this the total number of commercial walk-in type freezers and coolers? These units are typically found in storage and receiving areas.		☐
Presence of cooking facilities	Yes	Does this school have a dedicated space in which food is prepared and served to students? If the school has space in which food for students is only kept warm and/or served to students, or has only a galley that is used by teachers and staff then the answer is "no".		☐
Percent Cooled	80 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐

Months	12 (Optional)	Is this school in operation for at least 8 months of the year?		
High School?	Yes	Is this building a high school (teaching grades 10, 11, and/or 12)? If the building teaches to high school students at all, the user should check 'yes' to 'high school'. For example, if the school teaches to grades K-12 (elementary/middle and high school), the user should check 'yes' to 'high school'.		

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Jersey Central Power & Lt Co

Fuel Type: Electricity

Meter: North Main Building- 10 00 04 6297 03 (kWh)
Space(s): North Hunterdon Main Building

Start Date	End Date	Energy Use (kWh)
02/19/2009	03/20/2009	402,313.00
01/20/2009	02/18/2009	477,357.00
12/19/2008	01/19/2009	509,908.00
11/20/2008	12/18/2008	418,832.00
10/20/2008	11/19/2008	300,150.00
09/20/2008	10/19/2008	235,200.00
08/20/2008	09/19/2008	214,298.00
07/20/2008	08/19/2008	141,131.00
06/20/2008	07/19/2008	175,329.00
05/20/2008	06/19/2008	266,409.00
04/20/2008	05/19/2008	304,866.00
North Main Building- 10 00 04 6297 03 Consumption (kWh)		**3,445,793.00**
North Main Building- 10 00 04 6297 03 Consumption (kBtu)		**11,757,045.72**
Total Electricity Consumption (kBtu)		**11,757,045.72**
Is this the total Electricity consumption at this building including all Electricity meters?		☐

Fuel Type: Natural Gas

Meter: Natural Gas - 6583570581 (therms)
Space(s): North Hunterdon Main Building

Start Date	End Date	Energy Use (therms)
03/01/2009	03/31/2009	15,353.50
02/01/2009	02/28/2009	21,455.50
01/01/2009	01/31/2009	28,026.00
12/01/2008	12/31/2008	22,906.00
11/01/2008	11/30/2008	1,556.00
10/01/2008	10/31/2008	7,621.20
09/01/2008	09/30/2008	1,495.80
08/01/2008	08/31/2008	523.50
07/01/2008	07/31/2008	10.50
06/01/2008	06/30/2008	633.20

05/01/2008	05/31/2008	2,274.80
04/01/2008	04/30/2008	6,665.40
Natural Gas - 6583570581 Consumption (therms)		**108,521.40**
Natural Gas - 6583570581 Consumption (kBtu)		**10,852,140.00**
Total Natural Gas Consumption (kBtu)		**10,852,140.00**
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		☐

Additional Fuels	
Do the fuel consumption totals shown above represent the total energy use of this building? Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.	☐

Certifying Professional

(When applying for the ENERGY STAR, this must be the same PE that signed and stamped the SEP.)

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

Facility
North Hunterdon High School
1445 State Route 31
Annandale, NJ 08801

Facility Owner
North Hunterdon Voorhees Regional HS District
1445 State Route 31
Annandale, NJ 08801

Primary Contact for this Facility
Susan Press
1445 State Route 31
Annandale, NJ 08801

General Information

North Hunterdon High School	
Gross Floor Area Excluding Parking: (ft^2)	284,219
Year Built	1950
For 12-month Evaluation Period Ending Date:	March 31, 2009

Facility Space Use Summary

North Hunterdon Main Building	
Space Type	K-12 School
Gross Floor Area(ft^2)	284,219
Open Weekends?	Yes
Number of PCs	773
Number of walk-in refrigeration/freezer units	3
Presence of cooking facilities	Yes
Percent Cooled	80
Percent Heated	100
Months[o]	12
High School?	Yes
School District[o]	North Hunterdon-Voorhees Regional High School

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 03/31/2009)	**Baseline** (Ending Date 08/31/2008)	**Rating of 75**	**Target**	**National Average**
Energy Performance Rating	43	44	75	N/A	50
Energy Intensity					
Site (kBtu/ft^2)	83	85	61	N/A	78
Source (kBtu/ft^2)	190	189	140	N/A	179
Energy Cost					
$/year	$ 636,094.01	$ 593,278.27	$ 467,822.06	N/A	$ 598,181.12
$/$ft^2$/year	$ 2.24	$ 2.09	$ 1.65	N/A	$ 2.11
Greenhouse Gas Emissions					
$MtCO_2e$/year	2,519	2,511	1,853	N/A	2,369
$kgCO_2e/ft^2$/year	9	9	7	N/A	8

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. The National Average column presents energy performance data your building would have if your building had an average rating of 50.

Notes:
o - This attribute is optional.
d - A default value has been supplied by Portfolio Manager.

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Facilities & Technology Office

Building ID: 1789370
For 12-month Period Ending: March 31, 2009[1]
Date SEP becomes ineligible: N/A
Date SEP Generated: July 08, 2009

Facility
Facilities & Technology Office
1445 State Route 31
Annandale, NJ 08801

Facility Owner
North Hunterdon Voorhees Regional HS District
1445 State Route 31
Annandale, NJ 08801

Primary Contact for this Facility
Susan Press
1445 State Route 31
Annandale, NJ 08801

Year Built: 1988
Gross Floor Area (ft²): 880

Energy Performance Rating[2] (1-100) N/A

Site Energy Use Summary[3]

Electricity (kBtu)	126,133
Natural Gas (kBtu)[4]	0
Total Energy (kBtu)	126,133

Energy Intensity[5]

Site (kBtu/ft²/yr)	143
Source (kBtu/ft²/yr)	479

Emissions (based on site energy use)

Greenhouse Gas Emissions ($MtCO_2e$/year)	19

Electric Distribution Utility
Jersey Central Power & Lt Co

National Average Comparison

National Average Site EUI	77
National Average Source EUI	182
% Difference from National Average Source EUI	163%
Building Type	Office

Stamp of Certifying Professional

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate.

Meets Industry Standards[6] **for Indoor Environmental Conditions:**

Ventilation for Acceptable Indoor Air Quality	**N/A**
Acceptable Thermal Environmental Conditions	**N/A**
Adequate Illumination	**N/A**

Certifying Professional
Matthew Goss
15 British American Blvd
Latham, NY 12110

Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE in double-checking the information that the building owner or operator has entered into Portfolio Manager.

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.
NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Building Name	Facilities & Technology Office	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☐
Type	Office	Is this an accurate description of the space in question?		☐
Location	1445 State Route 31, Annandale, NJ 08801	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☐
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of acute care or children's hospitals) nor can they be submitted as representing only a portion of a building		☐

Facilities & Technology Office (Office)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	880 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		☐
Weekly operating hours	50 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		☐
Workers on Main Shift	6	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 10 workers per 1000 square feet (92.8 square meters)		☐
Number of PCs	6	Is this the number of personal computers in the Office?		☐
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		☐
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		☐

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Jersey Central Power & Lt Co

Fuel Type: Electricity		
Meter: S77480798 (kWh) **Space(s):** Entire Facility		
Start Date	**End Date**	**Energy Use (kWh)**
02/13/2009	03/12/2009	4,688.00
01/13/2009	02/12/2009	4,947.00
12/13/2008	01/12/2009	4,936.00
11/13/2008	12/12/2008	4,075.00
10/13/2008	11/12/2008	1,998.00
09/13/2008	10/12/2008	1,848.00
08/13/2008	09/12/2008	1,601.00
07/13/2008	08/12/2008	1,609.00
06/13/2008	07/12/2008	1,867.00
05/13/2008	06/12/2008	858.00
04/13/2008	05/12/2008	3,445.00
S77480798 Consumption (kWh)		**31,872.00**
S77480798 Consumption (kBtu)		**108,747.26**
Total Electricity Consumption (kBtu)		**108,747.26**
Is this the total Electricity consumption at this building including all Electricity meters?		☐

Additional Fuels	
Do the fuel consumption totals shown above represent the total energy use of this building? Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.	☐

Certifying Professional

(When applying for the ENERGY STAR, this must be the same PE that signed and stamped the SEP.)

Name: _____ Date: _____

Signature: _____

Signature is required when applying for the ENERGY STAR.

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

Facility
Facilities & Technology Office
1445 State Route 31
Annandale, NJ 08801

Facility Owner
North Hunterdon Voorhees Regional HS District
1445 State Route 31
Annandale, NJ 08801

Primary Contact for this Facility
Susan Press
1445 State Route 31
Annandale, NJ 08801

General Information

Facilities & Technology Office	
Gross Floor Area Excluding Parking: (ft^2)	880
Year Built	1988
For 12-month Evaluation Period Ending Date:	March 31, 2009

Facility Space Use Summary

Facilities & Technology Office	
Space Type	Office
Gross Floor Area(ft^2)	880
Weekly operating hours	50
Workers on Main Shift	6
Number of PCs	6
Percent Cooled	50% or more
Percent Heated	50% or more

Energy Performance Comparison

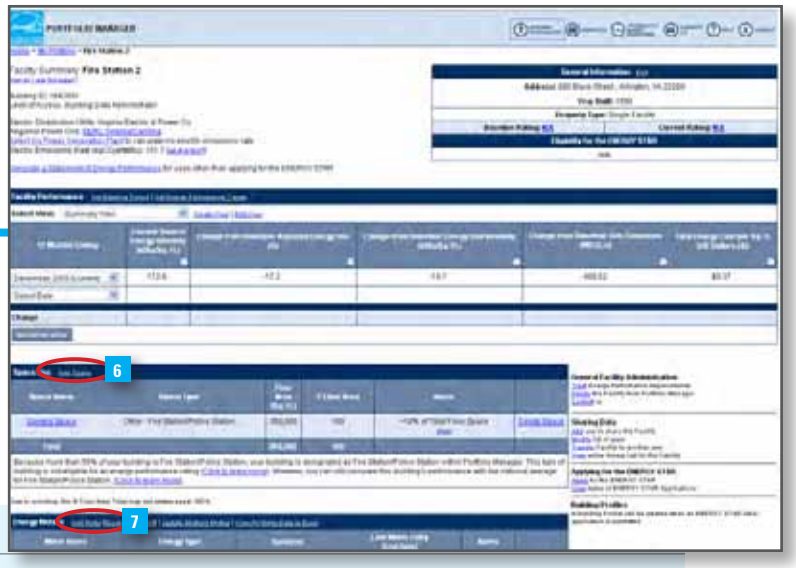
	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 03/31/2009)	**Baseline** (Ending Date 03/31/2009)	**Rating of 75**	**Target**	**National Average**
Energy Performance Rating	N/A	N/A	75	N/A	N/A
Energy Intensity					
Site (kBtu/ft^2)	143	143	39	N/A	77
Source (kBtu/ft^2)	479	479	130	N/A	182
Energy Cost					
$/year	$ 6,042.64	$ 6,042.64	$ 1,635.35	N/A	$ 3,246.24
$/$ft^2$/year	$ 6.87	$ 6.87	$ 1.86	N/A	$ 3.69
Greenhouse Gas Emissions					
$MtCO_2e$/year	19	19	5	N/A	10
$kgCO_2e/ft^2$/year	22	22	6	N/A	12

More than 50% of your building is defined as Office. This building is currently ineligible for a rating. Please note the National Average column represents the CBECS national average data for Office. This building uses X% less energy per square foot than the CBECS national average for Office.

Notes:
o - This attribute is optional.
d - A default value has been supplied by Portfolio Manager.

PORTFOLIO MANAGER QUICK REFERENCE GUIDE

Portfolio Manager is an interactive energy management tool that allows you to track and assess energy and water consumption across your entire portfolio of buildings in a secure online environment. Use this Quick Reference Guide to identify opportunities for energy efficiency improvements, track your progress over time, and verify results.

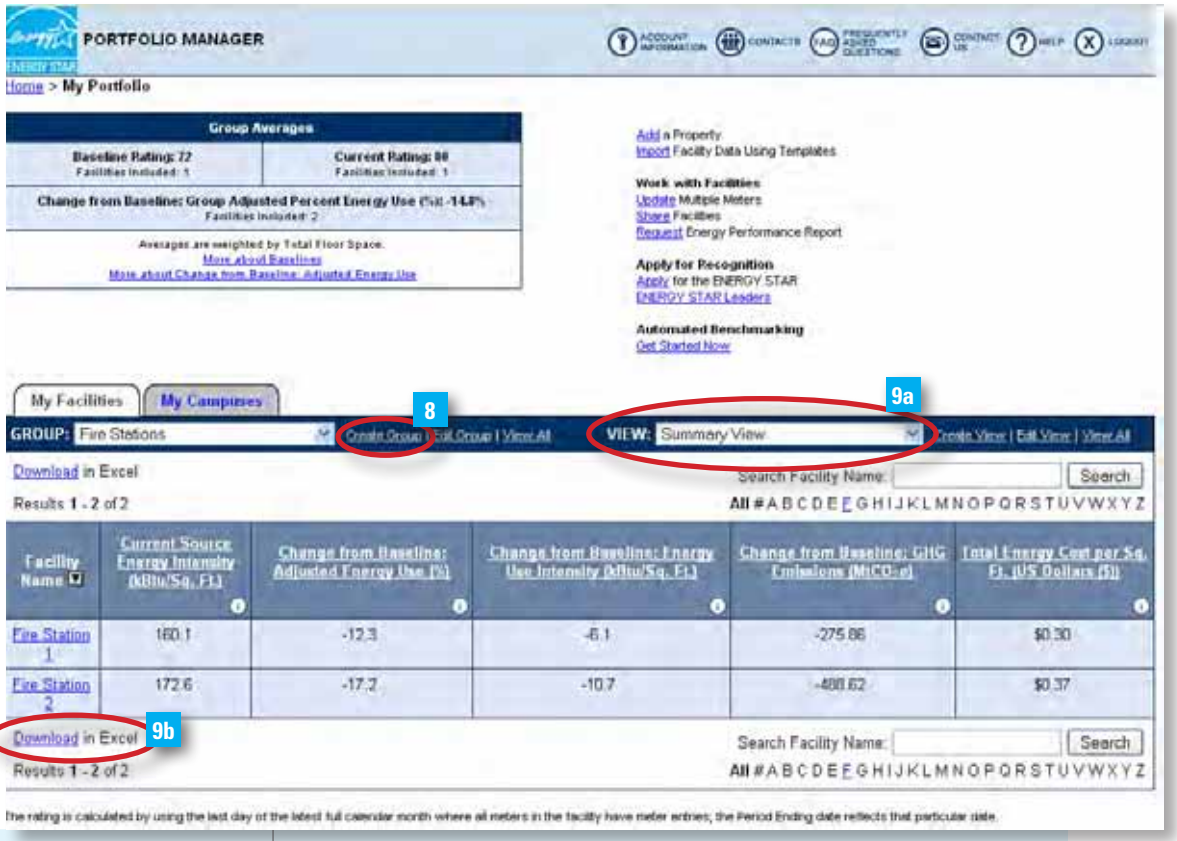


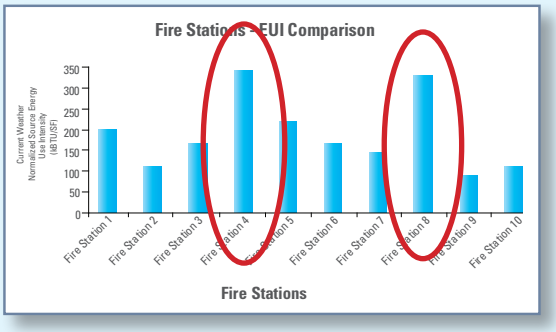
IDENTIFY ENERGY EFFICIENCY PROJECTS

Use Portfolio Manager to identify under-performing buildings to target for energy efficiency improvements and establish baselines for setting and measuring progress for energy efficiency improvement projects over time.

STEP	ACTIVITY	ACTION
1	Access Portfolio Manager. (step not shown)	Visit **www.energystar.gov/benchmark**. Scroll down to the **Login** section on the right-hand side in the middle of the page.
2	Access your account: (step not shown) • Create a new account. • Login to an existing account.	• Click **REGISTER,** and follow instructions. • Enter user name and password, and click **LOGIN**.
3	Review system updates and enter account. (step not shown)	Click **ACCESS MY PORTFOLIO**, located below **Welcome to Portfolio Manager**.
4	Add a new facility. (step not shown)	Click **ADD** a Property, located in the upper right portion of the screen.
5	Select property type and enter general facility information. (step not shown)	Select the option that most closely resembles your facility and click **CONTINUE**. Enter general data and click **SAVE**. For more information on facility space types, see: www.energystar.gov/index.cfm?c=eligibility.bus_portfoliomanager_space_types.
6	Enter space use data.	From the **Facility Summary** page, shown above, go to the **Space Use** section, located half way down the page, and click **ADD SPACE**. • Enter a facility name. In the **Select a Space Type** menu, select the appropriate space type(s) for your building. If your space is not listed, select **Other**. Click **CONTINUE**. • Enter building characteristics. Click **SAVE**. Information required for each space type is listed here: www.energystar.gov/index.cfm?c=eligibility.bus_portfoliomanager_space_types. • Repeat steps above to add all major spaces in your facility. Use bulk import service to minimize manual data entry of large sets of facility data (10 or more facilities or campuses are required). • Go back to **My Portfolio** by clicking on the link in the upper left portion of the page. • Click **IMPORT** Facility Data Using Templates, located below **Add a Property**.
7	Enter energy use data.	From the **Facility Summary** page, go to the **Energy Meters** section, located below the **Space Use** section, and click **ADD METER**. • Enter meter name, type, and units. Click **SAVE**. • Enter number of months and start date. Click **CONTINUE**. • Enter energy use and cost for each month. Click **SAVE**. • Repeat for all energy meters and fuel types.

www.energystar.gov/benchmark



STEP	ACTIVITY	ACTION
8	Create custom groups.	Organize facilities into groups (e.g., Fire Stations, Northwest Region). Groups are completely customizable, and each facility may belong to multiple groups. • From the **My Portfolio** page, click **CREATE GROUP**, located directly to the right of the **Group** drop-down menu. • Follow instructions to select buildings and name your group. • Once they have been saved, custom groups will be available in the **Group** drop-down menu.
9	View and interpret results.	Option 1: Go to **My Portfolio** and view all buildings to compare performance metrics. Option 2: Export data to Microsoft® Excel. • On the **My Portfolio** page, select the view, from the **View** drop-down menu that will display the data you wish to export. The **My Portfolio** page will update to display the selected view. (9a) • Select the **DOWNLOAD IN EXCEL** link. A File Download dialog window will open. Follow the steps provided by Excel. (9b) • Use Excel functionality to view building energy performance graphically . The example below shows a comparison of Energy Use Intensity for a portfolio of fire stations, identifying under-performing buildings to target for energy eficiency improvements. 

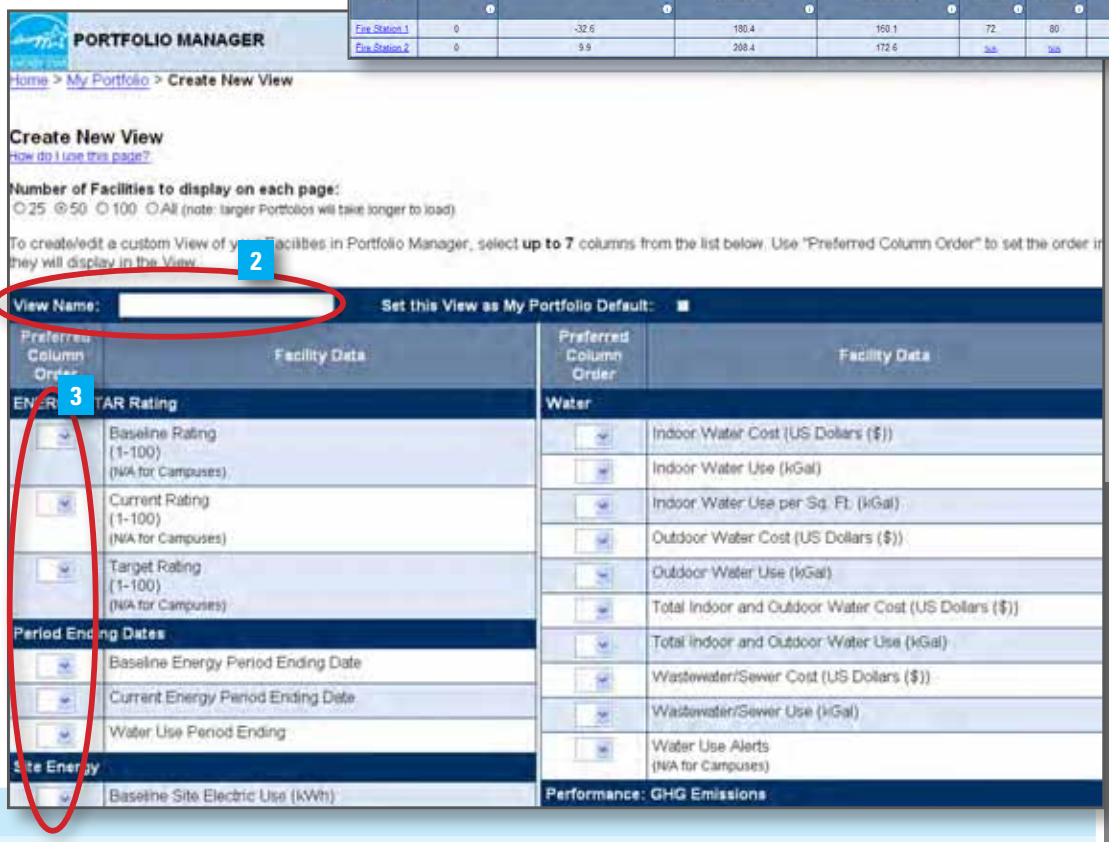
www.energystar.gov/benchmark

TRACK PROGRESS OVER TIME

Portfolio Manager comes pre-populated with nine standard summary views of facility data, which are displayed on the My Portfolio summary page. These standard views include:

- Summary: Energy Use
- Performance: Green House Gas Emissions
- Performance: Financial
- Performance: Water Use

Additionally, users can create and save custom downloadable views by choosing from more than 70 different metrics. The default view set by the user will display automatically after logging into Portfolio Manager, and data from all views can be exported to Microsoft® Excel.



CREATE A CUSTOM VIEW

STEP	ACTION
1	From the **My Portfolio** page or the **Facility Summary** page, select the **Create View** link, located directly to the right of the **View** drop-down menu.
2	Enter a name for the view. To set as the default view, select the box labeled **Set this View as My Portfolio Default**, located directly to the right of **View Name**. You may include up to 7 (seven) columns in each view.
3	Choose each metric to be included in the view by selecting an order number from the **Preferred Column Order** drop-down menu to the left of the **Facility Data** column.
4	Click **SAVE** at the bottom of the page. You will be returned to the **My Portfolio** page, and your custom view will be available in the **View** drop-down menu. (step not shown)

www.energystar.gov/benchmark

VERIFY AND DOCUMENT RESULTS

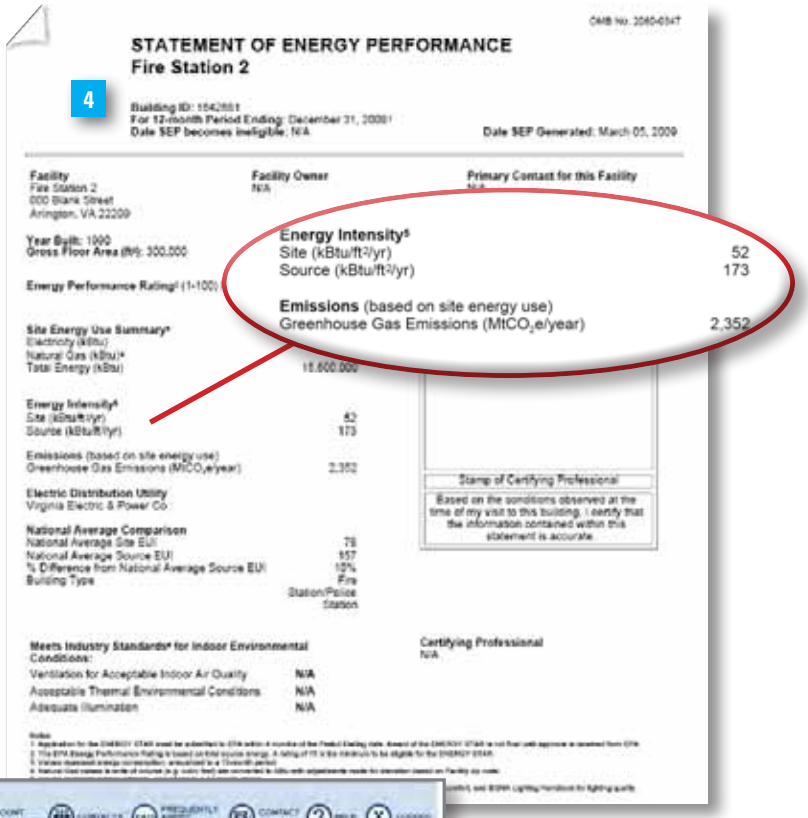
Use Portfolio Manager to quickly and accurately document reductions in energy use, greenhouse gas emissions, water use, and energy costs for an individual building or an entire portfolio. This valuable information can be used to provide a level of transparency and accountability to help demonstrate strategic use of funding.

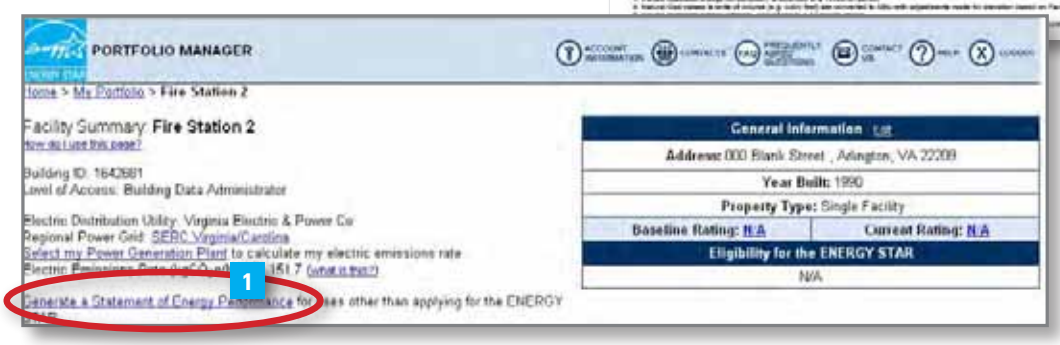
Generate a Statement of Energy Performance that includes valuable information about your building's performance, including:

- Normalized energy use intensity
- National average comparisons
- Greenhouse gas emissions
- Energy performance rating (if available)

In addition, you can also request an Energy Performance Report to see the change in performance over time for selected buildings or an entire portfolio. Available comparative metrics in this report include:

- Normalized energy use intensity
- Total electric use
- Total natural gas use
- Energy performance rating (if available)



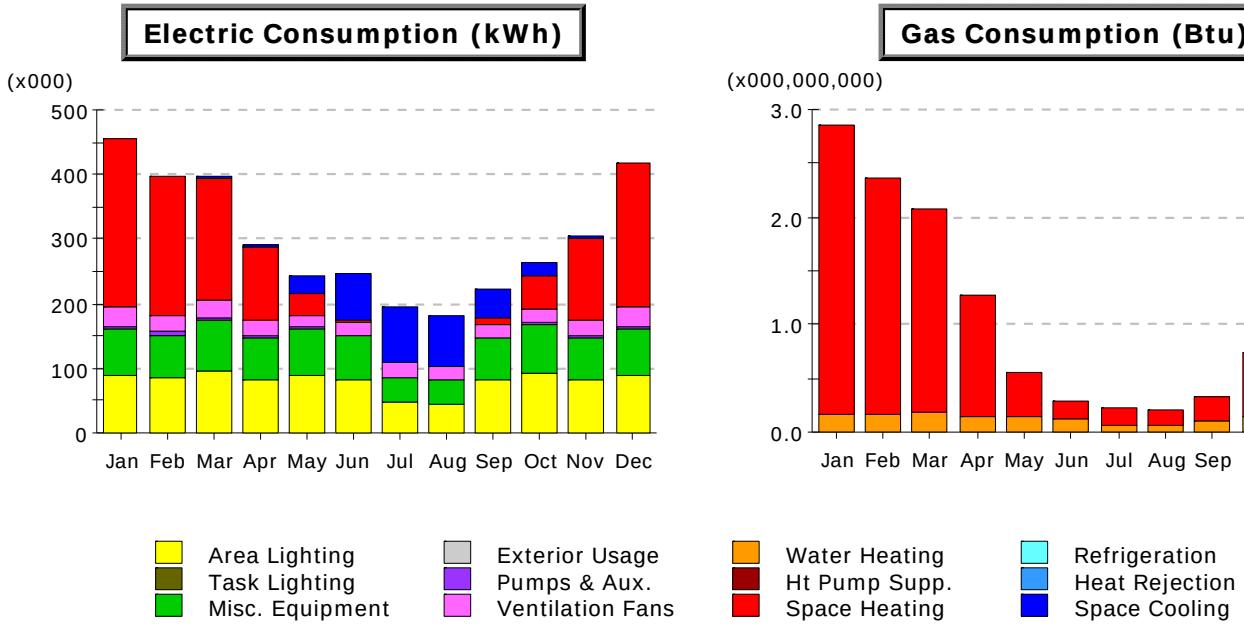


GENERATE A STATEMENT OF ENERGY PERFORMANCE AND AN ENERGY PERFORMANCE REPORT

STEP	ACTION
1	From your selected building's **Facility Summary** page, click **GENERATE A STATEMENT OF ENERGY PERFORMANCE**.
2	On the next page, select a period ending date. (step not shown)
3	Click **GENERATE REPORT,** located in the bottom right corner of the screen. (step not shown)
4	Save the Statement of Energy Performance, accompanying Data Checklist, and Facility Summary that include information on energy use intensity and greenhouse gas emissions.
5	From the **My Portfolio** page, click **REQUEST ENERGY PERFORMANCE REPORT**, located under **Work with Facilities**, which shows reductions in key performance indicators over a user-specified time period. Specify the type of report, the facilities to be included, and the requested report columns. The report will be e-mailed to a user-specified address within one business day. (step not shown)

APPENDIX C

eQUEST MODEL RESULTS

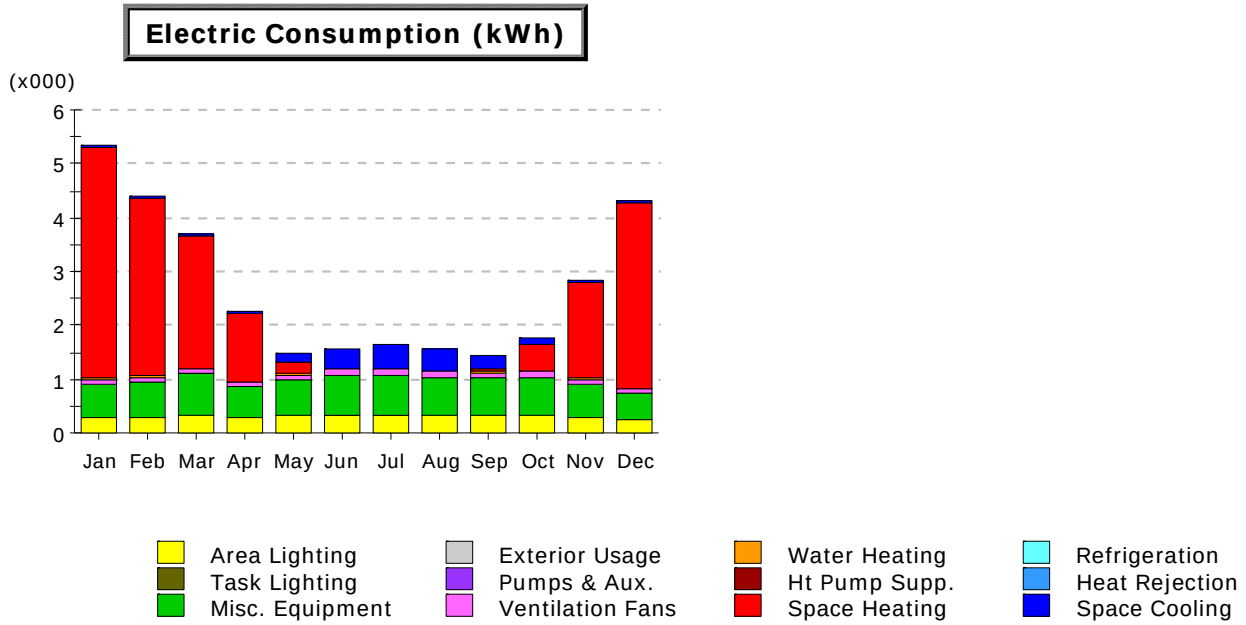


Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.6	3.1	25.1	72.1	86.7	78.0	43.3	19.8	1.3	0.6	330.6
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	258.9	214.0	190.1	115.3	34.2	3.7	1.5	0.3	10.5	52.9	128.8	223.5	1,233.8
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	30.3	26.2	26.0	22.5	19.9	20.6	22.1	19.6	20.4	21.4	23.2	28.5	280.8
Pumps & Aux.	5.0	4.5	4.7	3.8	1.8	1.1	1.0	1.0	1.1	2.8	4.3	4.9	35.9
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	71.7	67.6	77.7	65.3	71.7	66.5	38.0	36.8	65.3	74.7	65.3	71.7	772.2
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	89.3	84.1	96.8	81.3	89.3	82.7	47.1	45.6	81.3	93.0	81.3	89.3	961.1
Total	455.1	396.3	395.9	291.5	242.0	246.7	196.4	181.3	221.9	264.6	304.3	418.4	3,614.5

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.70	2.21	1.89	1.12	0.40	0.17	0.16	0.14	0.21	0.61	1.35	2.22	13.18
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.15	0.15	0.17	0.14	0.14	0.12	0.06	0.06	0.11	0.13	0.12	0.14	1.49
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.08
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.86	2.37	2.07	1.27	0.55	0.30	0.22	0.20	0.33	0.74	1.48	2.38	14.76

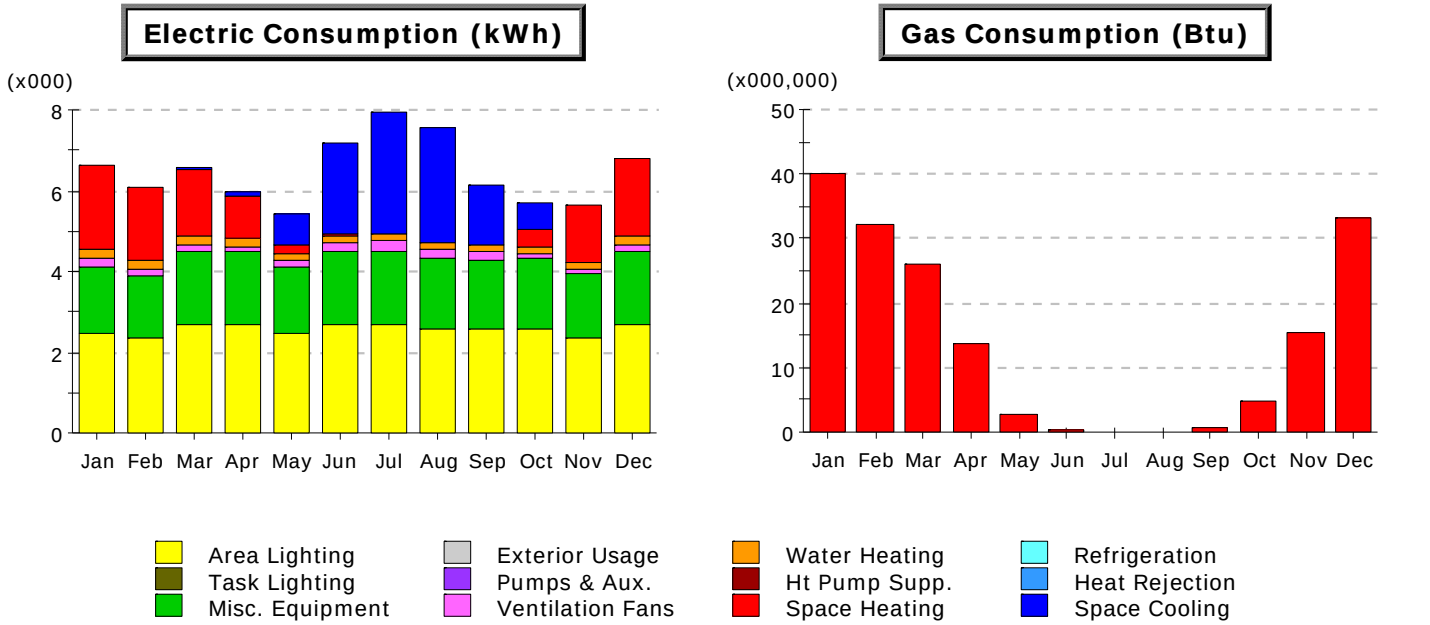


Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	0.02	0.03	0.04	0.04	0.15	0.36	0.44	0.41	0.23	0.14	0.03	0.02	1.92
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	4.29	3.32	2.45	1.27	0.20	0.01	0.00	-	0.05	0.50	1.80	3.46	17.33
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.29
Vent. Fans	0.07	0.08	0.09	0.07	0.08	0.09	0.09	0.09	0.09	0.09	0.07	0.06	0.97
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	0.63	0.65	0.74	0.60	0.69	0.74	0.74	0.71	0.71	0.71	0.63	0.52	8.06
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	0.29	0.30	0.35	0.27	0.32	0.35	0.35	0.33	0.33	0.33	0.29	0.23	3.73
Total	5.33	4.39	3.70	2.28	1.47	1.57	1.65	1.57	1.43	1.79	2.84	4.30	32.31

Gas Consumption (Btu)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool													
Heat Reject.													
Refrigeration													
Space Heat													
HP Supp.													
Hot Water													
Vent. Fans													
Pumps & Aux.													
Ext. Usage													
Misc. Equip.													
Task Lights													
Area Lights													
Total													

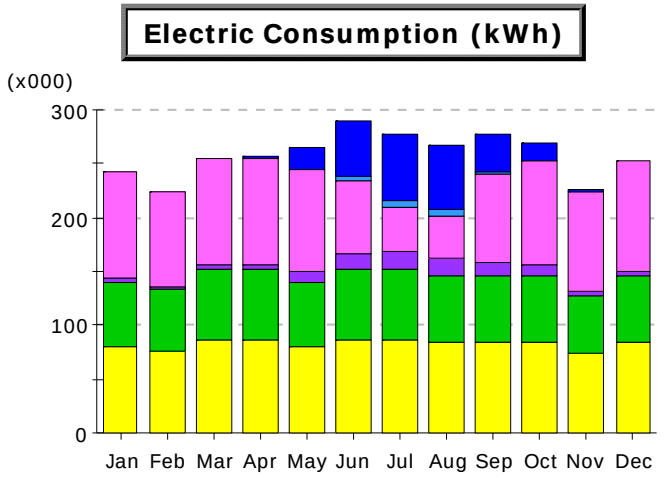


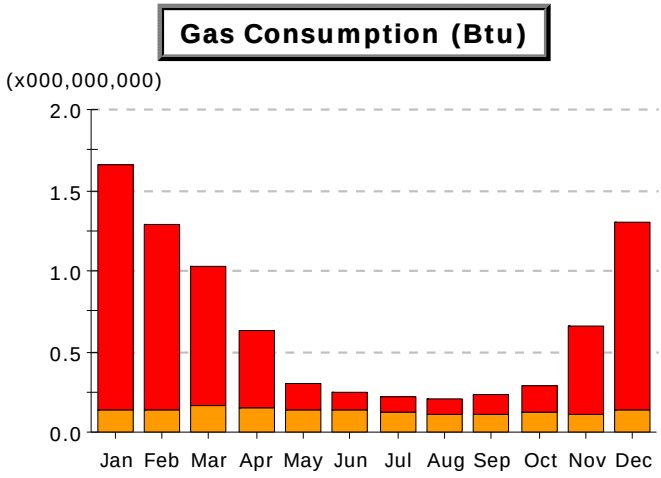
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.01	0.10	0.77	2.27	2.99	2.82	1.46	0.64	0.03	0.01	11.11
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	2.10	1.81	1.65	1.01	0.19	0.00	-	0.00	0.02	0.42	1.41	1.90	10.51
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.21	0.21	0.24	0.23	0.20	0.20	0.19	0.17	0.17	0.18	0.18	0.22	2.39
Vent. Fans	0.18	0.16	0.15	0.13	0.13	0.22	0.26	0.25	0.18	0.14	0.11	0.17	2.08
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	1.67	1.57	1.81	1.80	1.67	1.80	1.81	1.74	1.73	1.74	1.59	1.81	20.74
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	2.46	2.33	2.69	2.69	2.46	2.69	2.69	2.57	2.57	2.57	2.34	2.69	30.75
Total	6.63	6.07	6.56	5.96	5.42	7.18	7.94	7.56	6.12	5.68	5.65	6.80	77.57

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	40.13	32.13	26.04	13.75	2.65	0.23	-	-	0.70	4.70	15.50	33.22	169.04
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	40.13	32.13	26.04	13.75	2.65	0.23	-	-	0.70	4.70	15.50	33.22	169.04



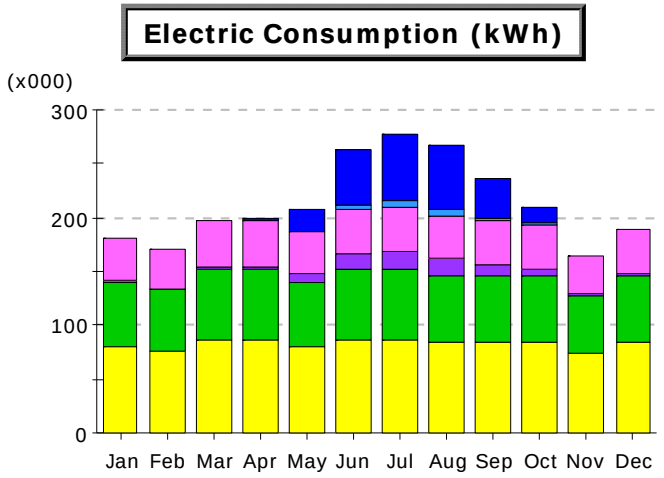


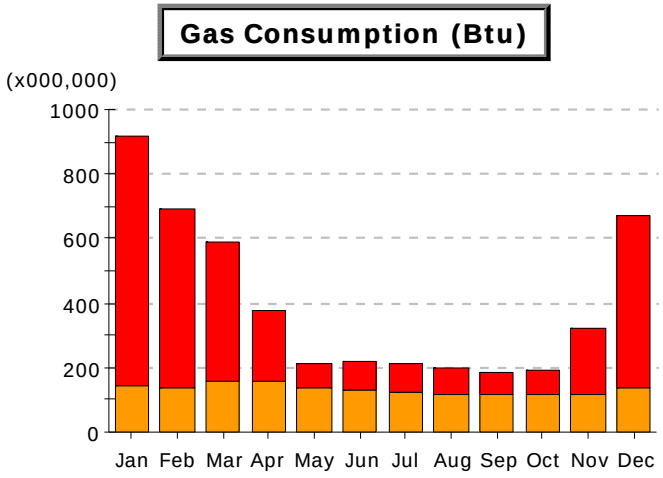
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.4	2.9	19.5	50.7	60.7	59.6	35.7	15.4	0.8	0.0	245.6
Heat Reject.	-	-	0.0	0.1	1.2	4.7	6.1	5.7	2.7	1.0	0.0	-	21.4
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	97.3	88.6	98.0	97.9	93.1	67.4	42.3	40.4	81.0	97.4	92.3	101.6	997.3
Pumps & Aux.	4.0	3.6	4.1	5.0	9.9	15.0	15.1	14.7	13.0	8.6	4.0	4.1	101.2
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	60.3	56.8	65.4	65.1	60.3	65.1	65.4	62.8	62.5	62.8	54.9	62.8	744.3
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	80.4	75.8	87.2	86.7	80.4	86.7	87.2	83.8	83.4	83.8	73.3	83.8	992.6
Total	242.0	224.9	255.1	257.7	264.4	289.5	276.7	267.1	278.3	269.0	225.4	252.4	3,102.3

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	1.51	1.14	0.87	0.47	0.16	0.11	0.09	0.09	0.11	0.17	0.54	1.16	6.44
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.14	0.14	0.16	0.16	0.13	0.13	0.12	0.11	0.11	0.12	0.11	0.14	1.59
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1.65	1.28	1.03	0.63	0.29	0.25	0.21	0.20	0.23	0.29	0.65	1.30	8.02



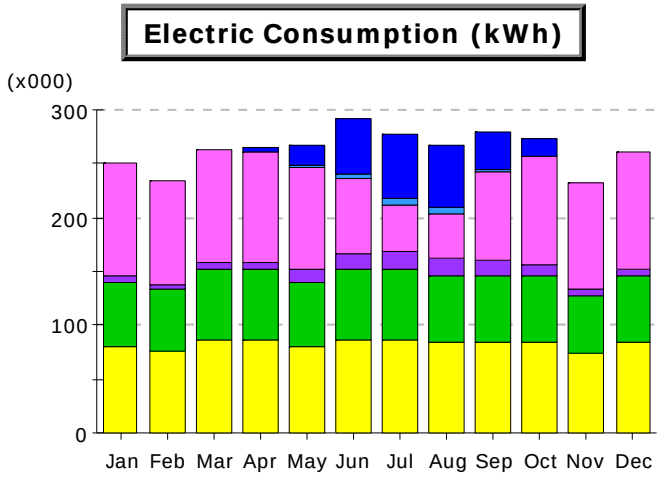


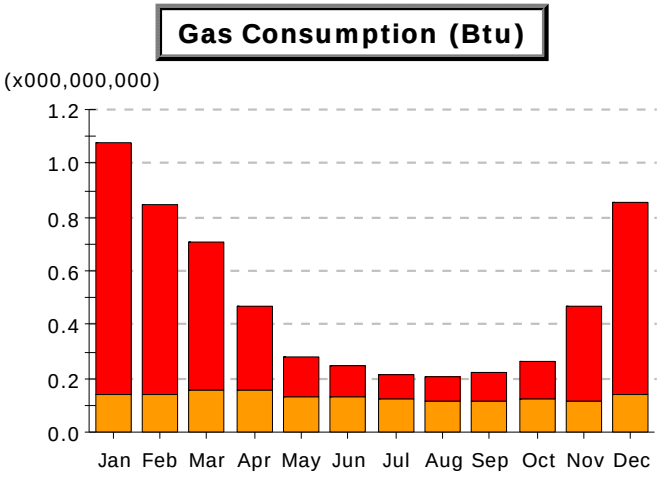
Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.4	3.0	19.9	50.3	60.7	59.6	36.1	16.1	0.9	0.0	247.1
Heat Reject.	-	-	0.0	0.1	1.3	4.7	6.1	5.7	2.8	1.1	0.0	-	21.8
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	38.1	36.2	42.1	42.3	38.5	42.3	42.3	40.4	40.4	40.4	34.6	40.2	477.7
Pumps & Aux.	1.4	1.3	1.6	2.5	7.5	13.9	15.1	14.7	11.2	6.1	1.5	1.4	78.3
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	60.3	56.8	65.4	65.1	60.3	65.1	65.4	62.8	62.5	62.8	54.9	62.8	744.3
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	80.4	75.8	87.2	86.7	80.4	86.7	87.2	83.8	83.4	83.8	73.3	83.8	992.6
Total	180.3	170.2	196.7	199.7	207.9	262.9	276.7	267.1	236.4	210.3	165.2	188.3	2,561.7

Gas Consumption (Btu x000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	772.5	555.8	431.0	220.6	78.1	86.5	89.3	87.2	73.5	74.6	211.9	530.2	3,211.3
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	142.5	138.5	159.1	155.1	133.9	133.0	124.5	114.4	113.5	119.3	113.2	138.9	1,586.0
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	915.0	694.3	590.0	375.8	212.0	219.6	213.8	201.6	187.1	193.9	325.1	669.1	4,797.3





Electric Consumption (kWh x000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	0.4	2.9	19.4	50.0	59.2	58.7	35.7	15.4	0.8	0.0	242.5
Heat Reject.	-	-	0.0	0.1	1.2	4.6	6.0	5.7	2.7	1.0	0.0	-	21.3
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	-	-	-	-	-	-	-	-	-	-	-	-	-
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	-	-	-	-	-	-	-	-	-	-	-	-	-
Vent. Fans	105.0	95.5	104.9	103.1	95.3	69.5	44.1	42.1	82.4	99.9	97.7	109.1	1,048.5
Pumps & Aux.	5.6	5.1	5.7	6.3	10.8	15.5	15.4	15.0	13.6	9.5	5.4	5.8	113.8
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	60.3	56.8	65.4	65.1	60.3	65.1	65.4	62.8	62.5	62.8	54.9	62.8	744.3
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	80.4	75.8	87.2	86.7	80.4	86.7	87.2	83.8	83.4	83.8	73.3	83.8	992.6
Total	251.4	233.2	263.5	264.2	267.5	291.5	277.2	268.1	280.3	272.4	232.2	261.6	3,162.9

Gas Consumption (Btu x000,000,000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Space Cool	-	-	-	-	-	-	-	-	-	-	-	-	-
Heat Reject.	-	-	-	-	-	-	-	-	-	-	-	-	-
Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-
Space Heat	0.93	0.71	0.55	0.31	0.14	0.11	0.09	0.09	0.11	0.15	0.35	0.72	4.27
HP Supp.	-	-	-	-	-	-	-	-	-	-	-	-	-
Hot Water	0.14	0.14	0.16	0.16	0.13	0.13	0.12	0.11	0.11	0.12	0.11	0.14	1.59
Vent. Fans	-	-	-	-	-	-	-	-	-	-	-	-	-
Pumps & Aux.	-	-	-	-	-	-	-	-	-	-	-	-	-
Ext. Usage	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc. Equip.	-	-	-	-	-	-	-	-	-	-	-	-	-
Task Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Area Lights	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	1.08	0.85	0.71	0.47	0.28	0.25	0.21	0.20	0.23	0.27	0.47	0.86	5.86

Camp Dresser and McKee Inc. **BUILDING HEATING AND VENTILATION ANALYSIS REPORT**

CLIENT NAME :	**North Hunterdon Regional School District**	**PROJECT :**	**Energy Audit**
JOB NUMBER :	**84378-71156**	**DETAIL :**	**North Hunterdon Maintenance Garage**
USER NAME :		**DATE :**	**7/14/2009**

VARIABLES AND INPUTS :

WINTER DESIGN PARAMETERS		**SUMMER DESIGN PARAMETERS**	
OUTDOOR TEMP (deg F) (-25 <= T <= 70)	10.0	OUTDOOR TEMP	94.0
INDOOR TEMP (deg F) (40 <= T <= 104)	55.0	INDOOR TEMP	104.0
		LIGHTING LOAD [0<=(Watts/Sq. Ft)<=5]	0.2
		ELECTRICAL LOAD (0<=Watts)	0
HEATING LOAD SAFETY FACTOR (1 <= FACTOR <= 2)	1.25	OTHER LOADS [0<=(Watts/Sq. Ft)]	1.0
		COOLING LOAD SAFETY FACTOR (1<=FACTOR<=2)	1.00

BUILDING SIZE		**SURFACE ORIENTATION**	**WALL LENGTH (Ft)**	**WALL U (Btu/Hr-Sq Ft-F)**
LENGTH (Ft)	46.00	NORTH	46.00	0.280
WIDTH (Ft)	40.00	EAST	40.00	0.280
HEIGHT (Ft)	12.00	SOUTH	46.00	0.280
VOL (Cu. Ft)	22,080.00	WEST	40.00	0.280
		PARTITION WALL/ SKYLIGHT GLASS	0.00	0.250

MINIMUM VENT RATE (heated, ACH -->0, 6, or 12 only)	0	ROOF U (Btu/Hr-Sq Ft-F)	0.280		
INFILTRATION RATE (ACH)	2.8	GROSS ROOF AREA (Sq Ft)	1,840.00	FLOOR AREA (Sq. Ft)	1,840.00
EMERGENCY VENT RATE (ACH=0 OR 12 only)	12			INFILTRATION (CFM)	1,032

RESULTS OF ANALYSIS :

WINTER		
TRANSMISSION LOAD	49,190	Btu/Hr
INFILTRATION LOAD	50,155	Btu/Hr
VENTILATION LOAD	-	Btu/Hr
* TOTAL BLDG HTG LOAD w/SAFETY	124,182	Btu/Hr

Assumptions

1. U Value reflects corrugated metal walls with 3/4 inch of blown insulation
2. infiltration assumed to be 0.5 cfm/sf of wall space (rough approximation for average buildings)

	R Value
Metal	0.862068966
Insulation	2.7
Total	**3.562068966**
U (Conductivity	**0.280735721**

THIS SPREADSHEET IS DEVELOPED BY SUNILSEN PERAMANU AS A PART OF MODULAR BUILDING HVAC DESIGN TASK, DECEMBER 1994

COMPUTED BY :_____RKA_____

CHECKED BY :_____MG_____

Camp Dresser and McKee Inc.

BUILDING HEATING AND VENTILATION ANALYSIS REPORT

CLIENT NAME :	**North Hunterdon High School Regional District**	**PROJECT :**	**Energy Audit**
JOB NUMBER :	**84378-71156**	**DETAIL :**	**Vorhees Maintenance Garage**
USER NAME :		**DATE :**	**7/14/2009**

VARIABLES AND INPUTS :

WINTER DESIGN PARAMETERS		**SUMMER DESIGN PARAMETERS**	
OUTDOOR TEMP (deg F) (-25 <= T <= 70)	10.0	OUTDOOR TEMP	94.0
INDOOR TEMP (deg F) (40 <= T <= 104)	55.0	INDOOR TEMP	104.0
		LIGHTING LOAD [0<=(Watts/Sq. Ft)<=5]	0.1
		ELECTRICAL LOAD (0<=Watts)	0
HEATING LOAD SAFETY FACTOR (1 <= FACTOR <= 2)	1.25	OTHER LOADS [0<=(Watts/Sq. Ft)]	1.0
		COOLING LOAD SAFETY FACTOR (1<=FACTOR<=2)	1.00

BUILDING SIZE		**SURFACE ORIENTATION**	**WALL LENGTH (Ft)**	**WALL U (Btu/Hr-Sq Ft-F)**
LENGTH (Ft)	82.00	NORTH	82.00	0.280
WIDTH (Ft)	42.00	EAST	42.00	0.280
HEIGHT (Ft)	12.00	SOUTH	82.00	0.280
VOL (Cu. Ft)	41,328.00	WEST	42.00	0.280
		PARTITION WALL/ SKYLIGHT GLASS	0.00	0.250

MINIMUM VENT RATE (heated, ACH -->0, 6, or 12 only)	0	ROOF U (Btu/Hr-Sq Ft-F)	0.280		
INFILTRATION RATE (ACH)	2.6	GROSS ROOF AREA (Sq Ft)	3,444.00	FLOOR AREA (Sq. Ft)	3,444.00
EMERGENCY VENT RATE (ACH=0 OR 12 only)	12			INFILTRATION (CFM)	1,786

RESULTS OF ANALYSIS :

WINTER		
TRANSMISSION LOAD	80,892	Btu/Hr
INFILTRATION LOAD	86,780	Btu/Hr
VENTILATION LOAD	-	Btu/Hr
* TOTAL BLDG HTG LOAD w/SAFETY	209,590	Btu/Hr

Assumptions

1. U Value reflects corrugated metal walls with 3/4 inch of blown insulation
2. infiltration assumed to be 0.6 cfm/sf of wall space (rough approximation for average buildings)

	R Value
Metal	0.862068966
Insulation	2.7
Total	3.562068966
U	**0.280735721**

THIS SPREADSHEET IS DEVELOPED BY SUNILSEN PERAMANU AS A PART OF MODULAR BUILDING HVAC DESIGN TASK, DECEMBER 1994

COMPUTED BY :_____RKA_____

CHECKED BY :_____MG_____

APPENDIX D

LIGHTING SPREADSHEET

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
15	North Hunterdon H.S.	010	028	2X4 recessed troffers/T12 Lamps/Magnetic Ballasts	87	3654	3.65	2,400	8,770	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	87	2349
16	North Hunterdon H.S.	010	026	2X4 recessed troffers/T12 Lamps/Magnetic Ballasts	148	6216	6.22	2,400	14,918	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	148	3996
17	North Hunterdon H.S.	010	128	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	88	2376	2.38	2,400	5,702	NONE PROPOSED	88	2376
18	North Hunterdon H.S.	010	127	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	84	2268	2.27	2,400	5,443	NONE PROPOSED	84	2268
19	North Hunterdon H.S.	010	126	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
20	North Hunterdon H.S.	010	126	25W Triple Tube Compact Fluorescent	1	29	0.03	2,400	70	NONE PROPOSED	1	29
21	North Hunterdon H.S.	010	Boys Gym	400W MH	28	12824	12.82	2,400	30,778	6-Lamp Fluorescent Highbay	168	4536
22	North Hunterdon H.S.	010	Wrestling Gym	400W MH	12	5496	5.50	2,400	13,190	6-Lamp Fluorescent Highbay	72	1944
23	North Hunterdon H.S.	010	Girls Gym	400W MH	18	8244	8.24	2,400	19,786	6-Lamp Fluorescent Highbay	108	2916
24	North Hunterdon H.S.	010	Auditorium Women's Dressing Room	40W Incandescent Bulb	83	3320	3.32	2,400	7,968	13W CFL	83	1079
25	North Hunterdon H.S.	010	110	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
26	North Hunterdon H.S.	010	114	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
27	North Hunterdon H.S.	010	113	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
28	North Hunterdon H.S.	010	111	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
29	North Hunterdon H.S.	010	129	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	96	2592	2.59	2,400	6,221	NONE PROPOSED	96	2592
30	North Hunterdon H.S.	010	132	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
31	North Hunterdon H.S.	010	S153	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
32	North Hunterdon H.S.	010	S154	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
33	North Hunterdon H.S.	010	S155	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
34	North Hunterdon H.S.	010	S156	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
35	North Hunterdon H.S.	010	Janitors Closet	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	500	81	NONE PROPOSED	6	162
36	North Hunterdon H.S.	010	112	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
37	North Hunterdon H.S.	010	Auditorium Men's Dressing Room	40W Incandescent Bulb	70	2800	2.80	2,400	6,720	13W CFL	70	910
38	North Hunterdon H.S.	010	S152	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	33	891	0.89	2,400	2,138	NONE PROPOSED	33	891
39	North Hunterdon H.S.	010	S151	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	54	1458	1.46	2,400	3,499	NONE PROPOSED	54	1458
40	North Hunterdon H.S.	010	S150	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	54	1458	1.46	2,400	3,499	NONE PROPOSED	54	1458
41	North Hunterdon H.S.	010	Athletics Office	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	54	1458	1.46	2,400	3,499	NONE PROPOSED	54	1458
42	North Hunterdon H.S.	010	Library	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	268	7236	7.24	2,400	17,366	NONE PROPOSED	268	7236
43	North Hunterdon H.S.	010	123	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
44	North Hunterdon H.S.	010	124	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	84	2268	2.27	2,400	5,443	NONE PROPOSED	84	2268
45	North Hunterdon H.S.	010	125	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	139	3753	3.75	2,400	9,007	NONE PROPOSED	139	3753
46	North Hunterdon H.S.	010	WR-A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
47	North Hunterdon H.S.	010	WR-B	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	45	1215	1.22	2,400	2,916	NONE PROPOSED	45	1215
48	North Hunterdon H.S.	010	130	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	185	4995	5.00	2,400	11,988	NONE PROPOSED	185	4995

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
49	North Hunterdon H.S.	010	Auditorium Storage	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	500	108	NONE PROPOSED	8	216
50	North Hunterdon H.S.	010	Auditorium Back Stage	25W Triple Tube Compact Fluorescent	4	116	0.12	2,400	278	NONE PROPOSED	4	116
51	North Hunterdon H.S.	010	Auditorium Back Stage	400W MH	4	1832	1.83	2,400	4,397	6-Lamp Fluorescent Highbay	24	648
52	North Hunterdon H.S.	010	S151A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	15	405	0.41	2,400	972	NONE PROPOSED	15	405
53	North Hunterdon H.S.	010	S152A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	15	405	0.41	2,400	972	NONE PROPOSED	15	405
54	North Hunterdon H.S.	010	Three Station Gym	High Bay CFL Fixtures	536	22512	22.51	2,400	54,029	6-Lamp Fluorescent Highbay	402	10854
55	North Hunterdon H.S.	010	Three Station Gym	400W MH Flood Lights	2	916	0.92	2,400	2,198	Remove fixtures, not necessary after conversion to fluorescent highbay	0	0
56	North Hunterdon H.S.	010	Three Station Gym Storage Area 1	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
57	North Hunterdon H.S.	010	Three Station Gym Storage Area 2	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
58	North Hunterdon H.S.	010	Three Station Gym Storage Area 3	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
59	North Hunterdon H.S.	010	Three Station Gym Storage Area 4	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
60	North Hunterdon H.S.	010	Attendance Office	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	86	2322	2.32	2,400	5,573	NONE PROPOSED	86	2322
61	North Hunterdon H.S.	010	117	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	39	1053	1.05	2,400	2,527	NONE PROPOSED	39	1053
62	North Hunterdon H.S.	010	Faculty Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
63	North Hunterdon H.S.	010	Principles Office	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	252	0.25	2,400	605	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	6	162
64	North Hunterdon H.S.	010	Boiler Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
65	North Hunterdon H.S.	010	001	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
66	North Hunterdon H.S.	010	003	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
67	North Hunterdon H.S.	010	001	BIAX recessed troffers	18	702	0.70	2,400	1,685	Replace BIAX with T8 w/ electronic ballast	18	486
68	North Hunterdon H.S.	010	003	BIAX recessed troffers	18	702	0.70	2,400	1,685	Replace BIAX with T8 w/ electronic ballast	18	486
69	North Hunterdon H.S.	010	125A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
70	North Hunterdon H.S.	010	125A	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
71	North Hunterdon H.S.	010	126	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	100	2700	2.70	2,400	6,480	NONE PROPOSED	100	2700
72	North Hunterdon H.S.	010	126	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
73	North Hunterdon H.S.	010	126	25W CFL	2	50	0.05	2,400	120	Replace with 13W CFL	2	26
74	North Hunterdon H.S.	010	Boys Gym Locker Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	81	2187	2.19	2,400	5,249	NONE PROPOSED	81	2187
75	North Hunterdon H.S.	010	Boys Gym Locker Room	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
76	North Hunterdon H.S.	010	Janitors Closet	150W Incandescent	1	150	0.15	500	75	Replace with 25W CFL	1	25
77	North Hunterdon H.S.	010	Storage Closet	Single Lamp T12/Magnetic Ballasts	2	84	0.08	500	42	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	2	54
78	North Hunterdon H.S.	010	Storage Closet	Single Lamp T12/Magnetic Ballasts	2	84	0.08	500	42	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	2	54
79	North Hunterdon H.S.	010	Trainers Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	26	702	0.70	2,400	1,685	NONE PROPOSED	26	702
80	North Hunterdon H.S.	010	Weight Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	54	1458	1.46	2,400	3,499	NONE PROPOSED	54	1458
81	North Hunterdon H.S.	010	Weight Room Office	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
82	North Hunterdon H.S.	010	Three Station Gym Officials Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
83	North Hunterdon H.S.	010	Womens Locker Room	2X4 troffers/T8 Lamps/Magnetic Ballasts	16	432	0.43	2,400	1,037	NONE PROPOSED	16	432
84	North Hunterdon H.S.	010	Womens Locker Room	25W CFL	3	75	0.08	2,400	180	NONE PROPOSED	3	75
85	North Hunterdon H.S.	010	Ticket Booth	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	2,400	130	NONE PROPOSED	2	54
86	North Hunterdon H.S.	010	Janitors Closet	2X4 troffers/T8 Lamps/Magnetic Ballasts	2	54	0.05	500	27	NONE PROPOSED	2	54
87	North Hunterdon H.S.	010	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
88	North Hunterdon H.S.	010	Womens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
89	North Hunterdon H.S.	010	Concession Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
90	North Hunterdon H.S.	010	Janitors Closet	60W Incandescent Bulb	1	60	0.06	500	30	Replace with 13W CFL	1	13
91	North Hunterdon H.S.	010	Nurse	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
92	North Hunterdon H.S.	010	Speech Specialist Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	18	486	0.49	2,400	1,166	NONE PROPOSED	18	486
93	North Hunterdon H.S.	010	Storage 2	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	500	27	NONE PROPOSED	2	54
94	North Hunterdon H.S.	010	134	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
95	North Hunterdon H.S.	010	Coaches Lounge	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	83	2241	2.24	2,400	5,378	NONE PROPOSED	83	2241
96	North Hunterdon H.S.	010	Coaches Lounge	25W CFL	2	50	0.05	2,400	120	NONE PROPOSED	2	50
97	North Hunterdon H.S.	010	Storage Area	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	500	27	NONE PROPOSED	2	54
98	North Hunterdon H.S.	010	Janitors Closet	Single T8 Lamp Fixture/Magnetic Ballasts	1	27	0.03	500	14	NONE PROPOSED	1	27
99	North Hunterdon H.S.	010	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	7	189	0.19	2,400	454	NONE PROPOSED	7	189

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
100	North Hunterdon H.S.	010	Guidance	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	66	1782	1.78	2,400	4,277	NONE PROPOSED	66	1782
101	North Hunterdon H.S.	010	108	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
102	North Hunterdon H.S.	010	109	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
103	North Hunterdon H.S.	010	106	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
104	North Hunterdon H.S.	010	103	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	48	1296	1.30	2,400	3,110	NONE PROPOSED	48	1296
105	North Hunterdon H.S.	010	Closet	Single T8 Lamp Fixture/Magnetic Ballasts	1	27	0.03	500	14	NONE PROPOSED	1	27
106	North Hunterdon H.S.	010	Faculty Dining	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	49	1323	1.32	2,400	3,175	NONE PROPOSED	49	1323
107	North Hunterdon H.S.	010	IT Dept.	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	26	702	0.70	2,400	1,685	NONE PROPOSED	26	702
108	North Hunterdon H.S.	010	Cafe B	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	326	8802	8.80	2,400	21,125	NONE PROPOSED	326	8802
109	North Hunterdon H.S.	010	Cafe B	50W CFL	10	500	0.50	2,400	1,200	NONE PROPOSED	10	500
110	North Hunterdon H.S.	010	Cafe A	2X4 recessed troffers/T8 Lamps/Electronic Ballasts	75	2025	2.03	2,400	4,860	NONE PROPOSED	75	2025
111	North Hunterdon H.S.	010	Cafe A	50W CFL	25	1250	1.25	2,400	3,000	NONE PROPOSED	25	1250
112	North Hunterdon H.S.	010	Maintenance Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	54	1458	1.46	2,400	3,499	NONE PROPOSED	54	1458
113	North Hunterdon H.S.	010	Maintenance Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	168	0.17	2,400	403	NONE PROPOSED	4	168
114	North Hunterdon H.S.	010	Maintenance Room	60W Incandescent Bulb	1	60	0.06	2,400	144	NONE PROPOSED	1	60
115	North Hunterdon H.S.	010	Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
116	North Hunterdon H.S.	010	Storage	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	500	27	NONE PROPOSED	2	54

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
117	North Hunterdon H.S.	010	Storage	25W CFL	1	25	0.03	500	13	NONE PROPOSED	1	25
118	North Hunterdon H.S.	010	Bathroom	60W Incandescent Bulb	1	27	0.03	2,400	65	Replace with 25W CFL	1	25
119	North Hunterdon H.S.	010	Locker Room 1	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
120	North Hunterdon H.S.	010	Locker Room 1	25W CFL	2	50	0.05	2,400	120	NONE PROPOSED	2	50
121	North Hunterdon H.S.	010	Locker Room 1	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
122	North Hunterdon H.S.	010	Locker Room 2	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
123	North Hunterdon H.S.	010	Locker Room 2	25W CFL	2	54	0.05	2,400	130	NONE PROPOSED	2	50
124	North Hunterdon H.S.	010	Locker Room 2	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
125	North Hunterdon H.S.	010	Storage	60W Incandescent Bulb	1	60	0.06	500	30	Replace with 13W CFL	1	13
126	North Hunterdon H.S.	010	Storage	60W Incandescent Bulb	1	60	0.06	500	30	Replace with 13W CFL	1	13
127	North Hunterdon H.S.	010	Team Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
128	North Hunterdon H.S.	010	Wrestling Room Storage Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
129	North Hunterdon H.S.	010	First Floor Hallway	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	620	16740	16.74	3,640	60,934	NONE PROPOSED	620	16740
130	North Hunterdon H.S.	010	First Floor Hallway Display Lighting	150W Incandescent	16	2400	2.40	3,640	8,736	Replace with 25W CFL	16	400
131	North Hunterdon H.S.	010	First Floor Hallway Display Lighting	400W MH	5	2290	2.29	3,640	8,336	NONE PROPOSED	5	2290
132	North Hunterdon H.S.	010	Wrestling Room Storage Room	2X4 troffers/T12 Lamps/Magnetic Ballasts	2	84	0.08	2,400	202	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	2	54
133	North Hunterdon H.S.	010	First Floor Hallway Display Lighting	25W CFL	22	550	0.55	3,640	2,002	NONE PROPOSED	22	550

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
134	North Hunterdon H.S.	010	Boiler Room	2X4 troffers/T8 Lamps/Electronic Ballasts	16	432	0.43	2,400	1,037	NONE PROPOSED	16	432
135	North Hunterdon H.S.	010	Auditorium	400W Metal Halide Recessed Downlights	16	7328	7.33	500	3,664	NONE PROPOSED	16	7328
136	North Hunterdon H.S.	010	Auditorium	500W Quartz Halogen Recessed Downlights	20	10000	10.00	500	5,000	NONE PROPOSED	20	10000
137	North Hunterdon H.S.	010	Auditorium	100W Incandescent Recessed Downlights	23	2300	2.30	500	1,150	NONE PROPOSED	23	2300
138	North Hunterdon H.S.	010	Auditorium	32W Metal Halide Recessed Downlights	22	880	0.88	500	440	NONE PROPOSED	22	880
139	North Hunterdon H.S.	020	244	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
140	North Hunterdon H.S.	020	245	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	27	729	0.73	2,400	1,750	NONE PROPOSED	27	729
141	North Hunterdon H.S.	020	243	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	27	729	0.73	2,400	1,750	NONE PROPOSED	27	729
142	North Hunterdon H.S.	020	242	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
143	North Hunterdon H.S.	020	241	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
144	North Hunterdon H.S.	020	240	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
145	North Hunterdon H.S.	020	Storage 4	60W Incandescent Bulb	1	60	0.06	500	30	NONE PROPOSED	1	60
146	North Hunterdon H.S.	020	Storage 6	60W Incandescent Bulb	1	60	0.06	500	30	NONE PROPOSED	1	60
147	North Hunterdon H.S.	020	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
148	North Hunterdon H.S.	020	Combined Facutly Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
149	North Hunterdon H.S.	020	Combined Facutly Room	100W Incandescent Bulb	2	200	0.20	2,400	480	NONE PROPOSED	2	200
150	North Hunterdon H.S.	020	239A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	9	243	0.24	2,400	583	NONE PROPOSED	9	243

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
151	North Hunterdon H.S.	020	239	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
152	North Hunterdon H.S.	020	238	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
153	North Hunterdon H.S.	020	237	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
154	North Hunterdon H.S.	020	237	60W Incandescent Bulb	1	60	0.06	2,400	144	NONE PROPOSED	1	60
155	North Hunterdon H.S.	020	236	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
156	North Hunterdon H.S.	020	Storage	100W Incandescent Bulb	2	200	0.20	500	100	NONE PROPOSED	2	200
157	North Hunterdon H.S.	020	Janitors Closet 7	25W CFL	1	25	0.03	2,400	60	NONE PROPOSED	1	25
158	North Hunterdon H.S.	020	235	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	27	729	0.73	2,400	1,750	NONE PROPOSED	27	729
159	North Hunterdon H.S.	020	234	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	45	1215	1.22	2,400	2,916	NONE PROPOSED	45	1215
160	North Hunterdon H.S.	020	S259	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
161	North Hunterdon H.S.	020	232	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	64	1728	1.73	2,400	4,147	NONE PROPOSED	64	1728
162	North Hunterdon H.S.	020	Mens Faculty Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
163	North Hunterdon H.S.	020	Womens Faculty Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
164	North Hunterdon H.S.	020	S253	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
165	North Hunterdon H.S.	020	Electrical Room	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
166	North Hunterdon H.S.	020	S254	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
167	North Hunterdon H.S.	020	S252	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
168	North Hunterdon H.S.	020	S251	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
169	North Hunterdon H.S.	020	S250A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
170	North Hunterdon H.S.	020	S250	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
171	North Hunterdon H.S.	020	Chemical Storage	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	12	324	0.32	500	162	NONE PROPOSED	12	324
172	North Hunterdon H.S.	020	231	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	60	1620	1.62	2,400	3,888	NONE PROPOSED	60	1620
173	North Hunterdon H.S.	020	229A&B	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	16	432	0.43	2,400	1,037	NONE PROPOSED	16	432
174	North Hunterdon H.S.	020	229	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	54	1458	1.46	2,400	3,499	NONE PROPOSED	54	1458
175	North Hunterdon H.S.	020	228	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	38	1026	1.03	2,400	2,462	NONE PROPOSED	38	1026
176	North Hunterdon H.S.	020	Hallway Display Lights	25W CFL	8	200	0.20	3,640	728	NONE PROPOSED	8	200
177	North Hunterdon H.S.	020	Hallway Display Lights	Single Lamp T8 Fixture/Electronic Ballast	2	54	0.05	3,640	197	NONE PROPOSED	2	54
178	North Hunterdon H.S.	020	230A	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
179	North Hunterdon H.S.	020	230	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	64	1728	1.73	2,400	4,147	NONE PROPOSED	64	1728
180	North Hunterdon H.S.	020	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	2,400	130	NONE PROPOSED	2	54
181	North Hunterdon H.S.	020	Janitors Closet	100W Incandescent Bulb	1	100	0.10	500	50	Replace with 25W CFL	1	25
182	North Hunterdon H.S.	020	Storage	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	500	27	NONE PROPOSED	2	54
183	North Hunterdon H.S.	020	227	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080
184	North Hunterdon H.S.	020	227	BIAX recessed troffers	20	780	0.78	2,400	1,872	Replace BIAX with T8 w/ electronic ballast	20	540

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
185	North Hunterdon H.S.	020	226	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
186	North Hunterdon H.S.	020	226	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 25W CFL	1	25
187	North Hunterdon H.S.	020	225	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	48	1296	1.30	2,400	3,110	NONE PROPOSED	48	1296
188	North Hunterdon H.S.	020	224	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
189	North Hunterdon H.S.	020	223	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	42	1134	1.13	2,400	2,722	NONE PROPOSED	42	1134
190	North Hunterdon H.S.	020	222	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
191	North Hunterdon H.S.	020	221	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
192	North Hunterdon H.S.	020	Storage	60W Incandescent Bulb	2	120	0.12	500	60	Replace with 25W CFL	2	50
193	North Hunterdon H.S.	020	Womens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	3	81	0.08	2,400	194	NONE PROPOSED	3	81
194	North Hunterdon H.S.	020	220	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
195	North Hunterdon H.S.	020	219	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
196	North Hunterdon H.S.	020	218	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
197	North Hunterdon H.S.	020	217	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
198	North Hunterdon H.S.	020	216	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
199	North Hunterdon H.S.	020	215	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
200	North Hunterdon H.S.	020	214	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
201	North Hunterdon H.S.	020	213	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
202	North Hunterdon H.S.	020	212	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
203	North Hunterdon H.S.	020	211	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
204	North Hunterdon H.S.	020	210	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	42	1134	1.13	2,400	2,722	NONE PROPOSED	42	1134
205	North Hunterdon H.S.	020	209	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
206	North Hunterdon H.S.	020	208	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
207	North Hunterdon H.S.	020	207	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
208	North Hunterdon H.S.	020	206	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
209	North Hunterdon H.S.	020	205	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
210	North Hunterdon H.S.	020	204	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
211	North Hunterdon H.S.	020	203	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	14	378	0.38	2,400	907	NONE PROPOSED	14	378
212	North Hunterdon H.S.	020	202	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
213	North Hunterdon H.S.	020	201	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
214	North Hunterdon H.S.	020	200	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
215	North Hunterdon H.S.	020	Lab Office	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
216	North Hunterdon H.S.	020	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	9	243	0.24	2,400	583	NONE PROPOSED	9	243
217	North Hunterdon H.S.	020	Womens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	9	243	0.24	2,400	583	NONE PROPOSED	9	243
218	North Hunterdon H.S.	020	Janitors Closet	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	500	54	NONE PROPOSED	4	108

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
219	North Hunterdon H.S.	020	Book Room	25W CFL	2	50	0.05	500	25	NONE PROPOSED	2	50
220	North Hunterdon H.S.	020	Lab Prep	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
221	North Hunterdon H.S.	020	Lab Office	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	2	54	0.05	2,400	130	NONE PROPOSED	2	54
222	North Hunterdon H.S.	020	Hallway Lights	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	280	7560	7.56	3,640	27,518	NONE PROPOSED	280	7560
223	North Hunterdon H.S.	020	Hallway Display Lights	25W CFL	2	50	0.05	3,640	182	NONE PROPOSED	2	50
224	North Hunterdon H.S.	020	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	3	81	0.08	2,400	194	NONE PROPOSED	3	81
225	North Hunterdon H.S.	020	Womens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	3	81	0.08	2,400	194	NONE PROPOSED	3	81
226	North Hunterdon H.S.	020	Mens Bathroom	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
227	North Hunterdon H.S.	-	Elevator	2X2 & 2X4 recessed troffers/T8 Lamps/Electronic Ballasts	3	81	0.08	2,400	194	NONE PROPOSED	3	81
228	North Hunterdon H.S.	-	Exterior Lighting	70W Metal Halide Bollard Lighting	10	950	0.95	2,400	2,280	NONE PROPOSED	10	950
229	North Hunterdon H.S.	-	Exterior Lighting	70W Metal Halide Grounds Lighting	10	950	0.95	2,400	2,280	NONE PROPOSED	10	950
230	North Hunterdon H.S.	-	Exterior Lighting	150W High Pressure Sodium Parking Lot Lighting	3	567	0.57	2,400	1,361	NONE PROPOSED	3	567
231	North Hunterdon H.S.	-	Exterior Lighting	400W Metal Halide Flag Pole/Sign Lighting	2	916	0.92	2,400	2,198	NONE PROPOSED	2	916
232	North Hunterdon H.S.	-	Exterior Lighting	42W CFL Building Mounted Light Fixtures	22	924	0.92	2,400	2,218	NONE PROPOSED	22	924
233	North Hunterdon H.S.	-	Exterior Lighting	50W Metal Halide Building Mounted Light Fixtures	8	576	0.58	2,400	1,382	NONE PROPOSED	8	576
234	North Hunterdon H.S.	-	Exterior Lighting	400W Metal Halide Light Poles	46	21068	21.07	2,400	50,563	NONE PROPOSED	46	21068
235	North Hunterdon H.S.	-	Exterior Lighting	150W Incandescent Building Mounted Light Fixtures	8	1200	1.20	2,400	2,880	Replace with 25W CFL	8	200

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
236	North Hunterdon H.S.	-	Maitenance Garage	8 Foot T-12 Pendant Mounted Fixtures/Magnetic Ballast	26	2912	2.91	2,400	6,989	Replace 8 foot T12 Lamps with (2) 4 foot T8 Lamps & Replace Magnetic Ballast with Electronic	52	1404
237	North Hunterdon H.S.	-	Maitenance Garage	4 Foot T-12 Pendant Mounted Fixtures/Magnetic Ballast	4	168	0.17	2,400	403	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	4	108
238	North Hunterdon H.S.	000	Regional Office	2X2 & 2X4 recessed troffers/T12 Lamps/Magnetic Ballasts	44	1848	1.85	2,400	4,435	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	44	1188
239	North Hunterdon H.S.	000	Regional Office	T5HO Pendant Mounted Fixtures	27	1701	1.70	2,400	4,082	NONE PROPOSED	27	1701
240	North Hunterdon H.S.	010	Regional Office	2X2 & 2X4 recessed troffers/T12 Lamps/Magnetic Ballasts	204	8568	8.57	2,400	20,563	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	204	5508
241	North Hunterdon H.S.	010	Regional Office	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
242	North Hunterdon H.S.	-	Facilities/Technology Office	2X4 troffers/T12 Lamps/Magnetic Ballasts	30	1260	1.26	2,401	3,025	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	30	810
243	Voorhees H.S.	010	Hallway	Various Fixtures/T8 Lamps/ Electronic Ballasts	664	17928	17.93	2,401	43,045	NONE PROPOSED	664	17928
244	Voorhees H.S.	010	Hallway	250W Metal Halide Fixtures	4	1152	1.15	2,402	2,767	NONE PROPOSED	4	1152
245	Voorhees H.S.	010	Hallway	300W Incandescent	44	13200	13.20	2,401	31,693	Replace with 65W CFL	44	2860
246	Voorhees H.S.	010	102 New Café	Various Fixtures/T8 Lamps/ Electronic Ballasts	134	3618	3.62	2,400	8,683	NONE PROPOSED	134	3618
247	Voorhees H.S.	010	102 New Café	300W Incandescent	12	3600	3.60	2,400	8,640	Replace with 65W CFL	25	1625
248	Voorhees H.S.	010	112	Various Fixtures/T8 Lamps/ Electronic Ballasts	238	6426	6.43	2,400	15,422	NONE PROPOSED	238	6426
249	Voorhees H.S.	010	112	2X4 troffers/T12 Lamps/Magnetic Ballasts	8	336	0.34	2,400	806	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	8	216
250	Voorhees H.S.	010	112	150W Incandescent	9	1350	1.35	2,400	3,240	Replace with 25W CFL	9	225
251	Voorhees H.S.	010	Auditorium	Various Fixtures/T8 Lamps/ Electronic Ballasts	80	2160	2.16	2,400	5,184	NONE PROPOSED	80	2160
252	Voorhees H.S.	010	Auditorium	250W Metal Halide Fixtures	30	8640	8.64	2,400	20,736	NONE PROPOSED	30	8640

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
253	Voorhees H.S.	010	Auditorium	150W Incandescent	24	3600	3.60	2,400	8,640	Replace with 25W CFL	24	600
254	Voorhees H.S.	010	120	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	2,400	1,037	NONE PROPOSED	16	432
255	Voorhees H.S.	010	Admin. Office	Various Fixtures/T8 Lamps/ Electronic Ballasts	156	4212	4.21	2,400	10,109	NONE PROPOSED	156	4212
256	Voorhees H.S.	010	Lavoratory (1) (Near Lockers)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
257	Voorhees H.S.	010	Closet (Near Lockers)	Various Fixtures/T8 Lamps/ Electronic Ballasts	2	54	0.05	500	27	NONE PROPOSED	2	54
258	Voorhees H.S.	010	Lavoratory (2) (Near Lockers)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
259	Voorhees H.S.	010	130	Various Fixtures/T8 Lamps/ Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
260	Voorhees H.S.	010	131 Nurse	Various Fixtures/T8 Lamps/ Electronic Ballasts	46	1242	1.24	2,400	2,981	NONE PROPOSED	46	1242
261	Voorhees H.S.	010	132 Guidance	Various Fixtures/T8 Lamps/ Electronic Ballasts	174	4698	4.70	2,400	11,275	NONE PROPOSED	174	4698
262	Voorhees H.S.	010	135 Teachers Lounge	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
263	Voorhees H.S.	010	136	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
264	Voorhees H.S.	010	137	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
265	Voorhees H.S.	010	160	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
266	Voorhees H.S.	010	161	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
267	Voorhees H.S.	010	162	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
268	Voorhees H.S.	010	163	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
269	Voorhees H.S.	010	A10 Exit (?)	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
270	Voorhees H.S.	010	164	Various Fixtures/T8 Lamps/ Electronic Ballasts	42	1134	1.13	2,400	2,722	NONE PROPOSED	42	1134
271	Voorhees H.S.	010	166	Various Fixtures/T8 Lamps/ Electronic Ballasts	52	1404	1.40	2,400	3,370	NONE PROPOSED	52	1404
272	Voorhees H.S.	010	166A	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
273	Voorhees H.S.	010	166D	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
274	Voorhees H.S.	010	New Kitchen	Various Fixtures/T8 Lamps/ Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080
275	Voorhees H.S.	010	New Kitchen - Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	500	135	NONE PROPOSED	10	270
276	Voorhees H.S.	010	B3 (?)	Various Fixtures/T8 Lamps/ Electronic Ballasts	2	54	0.05	2,400	130	NONE PROPOSED	2	54
277	Voorhees H.S.	010	167	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
278	Voorhees H.S.	010	168	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
279	Voorhees H.S.	010	169	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
280	Voorhees H.S.	010	170	Various Fixtures/T8 Lamps/ Electronic Ballasts	50	1350	1.35	2,400	3,240	NONE PROPOSED	50	1350
281	Voorhees H.S.	010	New Science Room (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	42	1134	1.13	2,400	2,722	NONE PROPOSED	42	1134
282	Voorhees H.S.	010	New Science Room (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	42	1134	1.13	2,400	2,722	NONE PROPOSED	42	1134
283	Voorhees H.S.	010	Science Teachers Office	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
284	Voorhees H.S.	010	Science Room Closet	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	500	108	NONE PROPOSED	8	216
285	Voorhees H.S.	010	Cafeteria	Various Fixtures/T8 Lamps/ Electronic Ballasts	132	3564	3.56	2,400	8,554	NONE PROPOSED	132	3564
286	Voorhees H.S.	010	Dish Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
287	Voorhees H.S.	010	Attendance Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
288	Voorhees H.S.	010	Cafeteria - Lavoratory (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
289	Voorhees H.S.	010	Cafeteria - Lavoratory (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
290	Voorhees H.S.	010	Kitchen	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
291	Voorhees H.S.	010	Kitchen - Office 140A	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
292	Voorhees H.S.	010	Kitchen - Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
293	Voorhees H.S.	010	Kitchen - Serving Line	Various Fixtures/T8 Lamps/ Electronic Ballasts	76	2052	2.05	2,400	4,925	NONE PROPOSED	76	2052
294	Voorhees H.S.	010	142A Comm. Foods	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
295	Voorhees H.S.	010	141 Cove	Various Fixtures/T8 Lamps/ Electronic Ballasts	60	1620	1.62	2,400	3,888	NONE PROPOSED	60	1620
296	Voorhees H.S.	010	Boiler Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
297	Voorhees H.S.	010	Boiler Room Closet	Various Fixtures/T8 Lamps/ Electronic Ballasts		0	0.00	2,400	0	NONE PROPOSED	0	0
298	Voorhees H.S.	010	B&G Office	Various Fixtures/T8 Lamps/ Electronic Ballasts	26	702	0.70	2,400	1,685	NONE PROPOSED	26	702
299	Voorhees H.S.	010	B&G Office - Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	2,400	1,037	NONE PROPOSED	16	432
300	Voorhees H.S.	010	Male Lavoratory (Near B&G Office)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
301	Voorhees H.S.	010	Female Lavoratory (Near B&G Office)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
302	Voorhees H.S.	010	Cust. Break Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	36	972	0.97	500	486	NONE PROPOSED	36	972
303	Voorhees H.S.	010	New Weight Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	104	2808	2.81	2,400	6,739	NONE PROPOSED	104	2808

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
304	Voorhees H.S.	010	New Weight Room Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	2	54	0.05	2,400	130	NONE PROPOSED	2	54
305	Voorhees H.S.	010	Team Room	400W MH	7	3206	3.21	2,400	7,694	6-Lamp Fluorescent Highbay	42	1134
306	Voorhees H.S.	010	Team Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
307	Voorhees H.S.	010	Team Room Changing Area	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
308	Voorhees H.S.	010	Team Room Changing Area	150W Incandescent	1	150	0.15	2,400	360	Replace with 25W CFL	1	25
309	Voorhees H.S.	010	P.E.	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
310	Voorhees H.S.	010	AD	Various Fixtures/T8 Lamps/ Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
311	Voorhees H.S.	010	153	Various Fixtures/8' T12 Lamps/ Magnetic Ballasts	16	1880	1.88	2,400	4,512	Replace 8 foot T12 Lamps with (2) 4 foot T8 Lamps & Replace Magnetic Ballast with Electronic	32	864
312	Voorhees H.S.	010	153	150W Incandescent Bulbs	4	600	0.60	2,400	1,440	Replace with 25W CFL	4	100
313	Voorhees H.S.	010	153	Various Fixtures/T8 Lamps/ Electronic Ballasts	2	54	0.05	2,400	130	NONE PROPOSED	2	54
314	Voorhees H.S.	010	Wrestling/Team Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
315	Voorhees H.S.	010	Wrestling/Team Room	400W MH	12	5496	5.50	2,400	13,190	6-Lamp Fluorescent Highbay	72	1944
316	Voorhees H.S.	010	Coach Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
317	Voorhees H.S.	010	Trainer Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
318	Voorhees H.S.	010	Coach Room (Next to Trainer Room)	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
319	Voorhees H.S.	010	Equipment Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	2,400	1,037	NONE PROPOSED	16	432
320	Voorhees H.S.	010	Locker Room Hallway	Various Fixtures/T8 Lamps/ Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
321	Voorhees H.S.	010	Girl's Locker Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	38	1026	1.03	2,400	2,462	NONE PROPOSED	38	1026
322	Voorhees H.S.	010	Girl's Locker Room	60W Incandescent Bulb	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
323	Voorhees H.S.	010	Boy's Locker Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	64	1728	1.73	2,400	4,147	NONE PROPOSED	64	1728
324	Voorhees H.S.	010	Boy's Locker Room	60W Incandescent	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
325	Voorhees H.S.	010	Phonebooth	60W Incandescent	1	60	0.06	2,400	144	Replace with 13W CFL	1	13
326	Voorhees H.S.	020	Hallway	Various Fixtures/T8 Lamps/ Electronic Ballasts	332	8964	8.96	2,402	21,532	NONE PROPOSED	332	8964
327	Voorhees H.S.	020	210	Various Fixtures/T8 Lamps/ Electronic Ballasts	124	3348	3.35	2,400	8,035	NONE PROPOSED	124	3348
328	Voorhees H.S.	020	213/214	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
329	Voorhees H.S.	020	215	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
330	Voorhees H.S.	020	216	Various Fixtures/T8 Lamps/ Electronic Ballasts	15	405	0.41	2,400	972	NONE PROPOSED	15	405
331	Voorhees H.S.	020	218	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
332	Voorhees H.S.	020	220	Various Fixtures/T8 Lamps/ Electronic Ballasts	80	2160	2.16	2,400	5,184	NONE PROPOSED	80	2160
333	Voorhees H.S.	020	221	Various Fixtures/T8 Lamps/ Electronic Ballasts	80	2160	2.16	2,400	5,184	NONE PROPOSED	80	2160
334	Voorhees H.S.	020	222	Various Fixtures/T8 Lamps/ Electronic Ballasts	80	2160	2.16	2,400	5,184	NONE PROPOSED	80	2160
335	Voorhees H.S.	020	223	Various Fixtures/T8 Lamps/ Electronic Ballasts	80	2160	2.16	2,400	5,184	NONE PROPOSED	80	2160
336	Voorhees H.S.	020	224	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
337	Voorhees H.S.	020	225	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
338	Voorhees H.S.	020	226	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
339	Voorhees H.S.	020	227	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
340	Voorhees H.S.	020	Lavoratory (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
341	Voorhees H.S.	020	Lavoratory (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
342	Voorhees H.S.	020	230	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
343	Voorhees H.S.	020	231	Various Fixtures/T8 Lamps/ Electronic Ballasts		0	0.00	2,400	0	NONE PROPOSED	0	0
344	Voorhees H.S.	020	232A/232B	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
345	Voorhees H.S.	020	233	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	2,400	648	NONE PROPOSED	10	270
346	Voorhees H.S.	020	234	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
347	Voorhees H.S.	020	Library	Various Fixtures/T8 Lamps/ Electronic Ballasts	288	7776	7.78	2,400	18,662	NONE PROPOSED	288	7776
348	Voorhees H.S.	020	240	Various Fixtures/T8 Lamps/ Electronic Ballasts	134	3618	3.62	2,400	8,683	NONE PROPOSED	134	3618
349	Voorhees H.S.	020	240A	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
350	Voorhees H.S.	020	Photo	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	500	216	NONE PROPOSED	16	432
351	Voorhees H.S.	020	Photo	150W Incandescent Bulbs	6	900	0.90	500	450	NONE PROPOSED	6	900
352	Voorhees H.S.	020	241	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
353	Voorhees H.S.	020	242B	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
354	Voorhees H.S.	020	Net.	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
355	Voorhees H.S.	020	Teacher Work Room 243-244	Various Fixtures/T8 Lamps/ Electronic Ballasts	110	2970	2.97	2,400	7,128	NONE PROPOSED	110	2970
356	Voorhees H.S.	020	Teacher Work Room Lavoratory	Unacccessable	0	0	0.00	2,400	0	Unacccessable	0	0
357	Voorhees H.S.	020	Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	500	108	NONE PROPOSED	8	216
358	Voorhees H.S.	020	205 Maint. Mechanical	Various Fixtures/T8 Lamps/ Electronic Ballasts	83	2241	2.24	500	1,121	NONE PROPOSED	83	2241
359	Voorhees H.S.	020	245	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
360	Voorhees H.S.	020	246	Various Fixtures/T8 Lamps/ Electronic Ballasts	120	3240	3.24	2,400	7,776	NONE PROPOSED	120	3240
361	Voorhees H.S.	020	247	Various Fixtures/T8 Lamps/ Electronic Ballasts	55	1485	1.49	2,400	3,564	NONE PROPOSED	55	1485
362	Voorhees H.S.	020	Mechanical	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	500	135	NONE PROPOSED	10	270
363	Voorhees H.S.	020	Elec. Mechanical	Various Fixtures/T8 Lamps/ Electronic Ballasts	10	270	0.27	500	135	NONE PROPOSED	10	270
364	Voorhees H.S.	020	250	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
365	Voorhees H.S.	020	Custodian	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	500	54	NONE PROPOSED	4	108
366	Voorhees H.S.	020	Lavoratory (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
367	Voorhees H.S.	020	Lavoratory (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
368	Voorhees H.S.	020	Snack Bar	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	500	54	NONE PROPOSED	4	108
369	Voorhees H.S.	020	255	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
370	Voorhees H.S.	020	256	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
371	Voorhees H.S.	020	257	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
372	Voorhees H.S.	020	258	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
373	Voorhees H.S.	020	258A	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
374	Voorhees H.S.	020	259	Various Fixtures/T8 Lamps/ Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
375	Voorhees H.S.	020	260	Various Fixtures/T8 Lamps/ Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
376	Voorhees H.S.	020	Lavoratory (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
377	Voorhees H.S.	020	Lavoratory (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
378	Voorhees H.S.	020	Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	500	108	NONE PROPOSED	8	216
379	Voorhees H.S.	020	261	Various Fixtures/T8 Lamps/ Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
380	Voorhees H.S.	020	262	Various Fixtures/T8 Lamps/ Electronic Ballasts	24	648	0.65	2,400	1,555	NONE PROPOSED	24	648
381	Voorhees H.S.	020	263	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
382	Voorhees H.S.	020	Main Gym	400W MH	41	18778	18.78	2,400	45,067	6-Lamp Fluorescent Highbay	246	6642
383	Voorhees H.S.	020	Main Gym Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	500	216	NONE PROPOSED	16	432
384	Voorhees H.S.	020	Main Gym Exit	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	2,400	259	NONE PROPOSED	4	108
385	Voorhees H.S.	020	P.E. Office	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
386	Voorhees H.S.	020	Girl's Locker Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	52	1404	1.40	2,400	3,370	NONE PROPOSED	52	1404
387	Voorhees H.S.	020	Girl's Locker Room Shower	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
388	Voorhees H.S.	020	Boy's Locker Room	Various Fixtures/T8 Lamps/ Electronic Ballasts	60	1620	1.62	2,400	3,888	NONE PROPOSED	60	1620

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
389	Voorhees H.S.	020	Boy's Locker Room Shower	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
390	Voorhees H.S.	020	New Gym	400W MH	20	9160	9.16	2,400	21,984	6-Lamp Fluorescent Highbay	120	3240
391	Voorhees H.S.	020	New Gym Storage Area	150W Incandescent	4	600	0.60	500	300	Replace with 25W CFL	4	100
392	Voorhees H.S.	030	Office	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
393	Voorhees H.S.	030	Hallway	Various Fixtures/T8 Lamps/ Electronic Ballasts	215	5805	5.81	2,401	13,938	NONE PROPOSED	215	5805
394	Voorhees H.S.	030	311	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
395	Voorhees H.S.	030	312	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
396	Voorhees H.S.	030	313	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
397	Voorhees H.S.	030	314	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
398	Voorhees H.S.	030	315	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
399	Voorhees H.S.	030	316	Various Fixtures/T8 Lamps/ Electronic Ballasts	60	1620	1.62	2,400	3,888	NONE PROPOSED	60	1620
400	Voorhees H.S.	030	Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	500	216	NONE PROPOSED	16	432
401	Voorhees H.S.	030	317	Various Fixtures/T8 Lamps/ Electronic Ballasts	30	810	0.81	2,400	1,944	NONE PROPOSED	30	810
402	Voorhees H.S.	030	Cust.	Various Fixtures/T8 Lamps/ Electronic Ballasts	4	108	0.11	500	54	NONE PROPOSED	4	108
403	Voorhees H.S.	030	318	Various Fixtures/T8 Lamps/ Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
404	Voorhees H.S.	030	Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	16	432	0.43	500	216	NONE PROPOSED	16	432
405	Voorhees H.S.	030	Lavoratory (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
406	Voorhees H.S.	030	Lavoratory (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
407	Voorhees H.S.	030	Mechanical	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
408	Voorhees H.S.	030	319	Various Fixtures/T8 Lamps/ Electronic Ballasts	15	405	0.41	2,400	972	NONE PROPOSED	15	405
409	Voorhees H.S.	030	319	Various Fixtures/T12 Lamps/Magnetic Ballasts	2	84	0.08	2,400	202	Replace T12 Lamps with T8 Lamps & Replace Magnetic Ballast with Electronic	2	54
410	Voorhees H.S.	030	320	Various Fixtures/T8 Lamps/ Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080
411	Voorhees H.S.	030	321	Various Fixtures/T8 Lamps/ Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080
412	Voorhees H.S.	030	322	Various Fixtures/T8 Lamps/ Electronic Ballasts	48	1296	1.30	2,400	3,110	NONE PROPOSED	48	1296
413	Voorhees H.S.	030	323	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
414	Voorhees H.S.	030	324	Various Fixtures/T8 Lamps/ Electronic Ballasts	12	324	0.32	2,400	778	NONE PROPOSED	12	324
415	Voorhees H.S.	030	325	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
416	Voorhees H.S.	030	326	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
417	Voorhees H.S.	030	330	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
418	Voorhees H.S.	030	331	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
419	Voorhees H.S.	030	332	Various Fixtures/T8 Lamps/ Electronic Ballasts	6	162	0.16	2,400	389	NONE PROPOSED	6	162
420	Voorhees H.S.	030	Lavoratory (1)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
421	Voorhees H.S.	030	Lavoratory (2)	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
422	Voorhees H.S.	030	Mechanical	Various Fixtures/T8 Lamps/ Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080

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Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
423	Voorhees H.S.	030	333	Various Fixtures/T8 Lamps/ Electronic Ballasts	38	1026	1.03	2,400	2,462	NONE PROPOSED	38	1026
424	Voorhees H.S.	030	Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	6	162	0.16	500	81	NONE PROPOSED	6	162
425	Voorhees H.S.	030	334	Various Fixtures/T8 Lamps/ Electronic Ballasts	36	972	0.97	2,400	2,333	NONE PROPOSED	36	972
426	Voorhees H.S.	030	Storage	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	500	432	NONE PROPOSED	32	864
427	Voorhees H.S.	030	335	Various Fixtures/T8 Lamps/ Electronic Ballasts	38	1026	1.03	2,400	2,462	NONE PROPOSED	38	1026
428	Voorhees H.S.	030	336	Various Fixtures/T8 Lamps/ Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080
429	Voorhees H.S.	030	337	Various Fixtures/T8 Lamps/ Electronic Ballasts	40	1080	1.08	2,400	2,592	NONE PROPOSED	40	1080
430	Voorhees H.S.	030	338	Various Fixtures/T8 Lamps/ Electronic Ballasts	20	540	0.54	2,400	1,296	NONE PROPOSED	20	540
431	Voorhees H.S.	030	340	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
432	Voorhees H.S.	030	341	Various Fixtures/T8 Lamps/ Electronic Ballasts	32	864	0.86	2,400	2,074	NONE PROPOSED	32	864
433	Voorhees H.S.	030	342	Various Fixtures/T8 Lamps/ Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
434	Voorhees H.S.	030	343	Various Fixtures/T8 Lamps/ Electronic Ballasts	28	756	0.76	2,400	1,814	NONE PROPOSED	28	756
435	Voorhees H.S.	030	344	Various Fixtures/T8 Lamps/ Electronic Ballasts	8	216	0.22	2,400	518	NONE PROPOSED	8	216
436	Voorhees H.S.	-	Exterior Lighting	250W Pole Mounted Fixtures	17	4896	4.90	2,401	11,755	NONE PROPOSED	17	4896
437	Voorhees H.S.	-	Exterior Lighting	400W Ground Fixtures	10	4580	4.58	2,402	11,001	NONE PROPOSED	10	4580
438	Voorhees H.S.	-	Exterior Lighting	1000W Parking Lot Fixtures	16	18080	18.08	2,403	43,446	NONE PROPOSED	16	18080
439	Voorhees H.S.	-	Exterior Lighting	300W Incandescent Canopy Mounted Fixtures	37	11100	11.10	4,380	48,618	Replace with 65W CFL	37	2405

ATTACHMENT D

Lighting Spreadsheets

Seq. #	Building	Floor #	Location/Room #	Existing Fixture/Lamp & Ballast Description	Exist. Qty of Lamps	Exist. Watts	Exist. kW Base	Oper. Hrs.	Exist. kWh	Proposed Replacement Solution	Prop. Qty of Lamps	Prop. Watts
440	Voorhees H.S.	-	Maitenance Garage	Various Fixtures/T8 Lamps/ Electronic Ballasts	42	1134	1.13	2,400	2,722	NONE PROPOSED	42	1134
441	Voorhees H.S.	-	Maitenance Garage	Various Fixtures/8' T12 Lamps/ Magnetic Ballasts	6	675	0.68	2,400	1,620	Replace 8 foot T12 Lamps with (2) 4 foot T8 Lamps & Replace Magnetic Ballast with Electronic	12	324
442	Voorhees H.S.	-	Maitenance Garage	Various Fixtures/T8 Lamps/ Electronic Ballasts	9	243	0.24	2,400	583	NONE PROPOSED	9	243
					14,874		602.84		1,449,256		15,509	

APPENDIX E

SOLAR ENERGY FINANCING WORKSHEET

Voorhees High School Solar Estimate

Design Goal: Provide 20% of average annual electricity

Solar Rating (Zip Code: 08826)	4.71 kWh/sq-m/day
Solar Capacity Required	492 kW
Roof Space Needed	49,202 sq-ft
Annual kWh	412,563
Gross System Installation Cost	$4,528,180
Federal Tax Credit	$1,358,454
NJ Renewable Energy Incentive	$50,000
Net System installation Cost	$3,119,726
Assumptions	
Annual System Degredation	0.50%
Annual Utility Inflation	3.78%
Federal Tax %	28.00%
State Tax %	7.80%
Annual Maintenance Costs	2%

Year	Utility Price	Solar kWh	Utility Savings	SRECS	Maintenance Costs	Annual Cash Flow	Cummulative Cash Flow	15 year G.O. Bond	Remaining Cash Flow	Plus DSA	Remaining Cash Flow
Install											
1	0.1619	412563.3	$66,794.0	$390,371	($8,251)	$448,913.7	$448,913.7	($270,701.4)	$178,212.3	$108,280.6	$286,492.9
2	0.1680	410500.5	$68,972.2	$376,767	($8,210)	$437,528.8	$886,442.5	($270,701.4)	$615,741.1	$108,280.6	$724,021.6
3	0.1744	408448.0	$71,221.5	$363,636	($8,169)	$426,688.8	$1,313,131.2	($270,701.4)	$1,042,429.8	$108,280.6	$1,150,710.4
4	0.1810	406405.7	$73,544.1	$350,964	($8,128)	$416,379.5	$1,729,510.7	($270,701.4)	$1,458,809.3	$108,280.6	$1,567,089.9
5	0.1878	404373.7	$75,942.4	$338,732	($8,087)	$406,587.4	$2,136,098.1	($270,701.4)	$1,865,396.7	$108,280.6	$1,973,677.3
6	0.1949	402351.8	$78,419.0	$326,928	($8,047)	$397,299.6	$2,533,397.6	($270,701.4)	$2,262,696.2	$108,280.6	$2,370,976.8
7	0.2023	400340.1	$80,976.3	$315,534	($8,007)	$388,503.7	$2,921,901.3	($270,701.4)	$2,651,199.9	$108,280.6	$2,759,480.5
8	0.2099	398338.4	$83,617.0	$304,538	($7,967)	$380,188.1	$3,302,089.4	($270,701.4)	$3,031,388.0	$108,280.6	$3,139,668.6
9	0.2178	396346.7	$86,343.9	$293,925	($7,927)	$372,341.6	$3,674,431.0	($270,701.4)	$3,403,729.6	$108,280.6	$3,512,010.2
10	0.2261	394365.0	$89,159.6	$283,681	($7,887)	$364,953.7	$4,039,384.7	($270,701.4)	$3,768,683.3	$108,280.6	$3,876,963.9
11	0.2346	392393.1	$92,067.2	$273,795	($7,848)	$358,014.4	$4,397,399.1	($270,701.4)	$4,126,697.7	$108,280.6	$4,234,978.3
12	0.2435	390431.2	$95,069.6	$264,253	($7,809)	$351,514.3	$4,748,913.5	($270,701.4)	$4,478,212.1	$108,280.6	$4,586,492.6
13	0.2527	388479.0	$98,169.9	$255,044	($7,770)	$345,444.4	$5,094,357.9	($270,701.4)	$4,823,656.5	$108,280.6	$4,931,937.1
14	0.2623	386536.6	$101,371.3	$246,156	($7,731)	$339,796.4	$5,434,154.3	($270,701.4)	$5,163,452.9	$108,280.6	$5,271,733.5
15	0.2722	384603.9	$104,677.2	$237,577	($7,692)	$334,562.4	$5,768,716.7	($270,701.4)	$5,498,015.3	$108,280.6	$5,606,295.9
16	0.2825	382680.9	$108,090.8	0	($7,654)	$100,437.2	$5,869,153.9		$5,869,153.9		$5,869,153.9
17	0.2931	380767.5	$111,615.7	0	($7,615)	$104,000.4	$5,973,154.3		$5,973,154.3		$5,973,154.3
18	0.3042	378863.7	$115,255.6	0	($7,577)	$107,678.4	$6,080,832.6		$6,080,832.6		$6,080,832.6
19	0.3157	376969.4	$119,014.2	0	($7,539)	$111,474.8	$6,192,307.4		$6,192,307.4		$6,192,307.4
20	0.3276	375084.5	$122,895.4	0	($7,502)	$115,393.7	$6,307,701.2		$6,307,701.2		$6,307,701.2
21	0.3400	373209.1	$126,903.1	0	($7,464)	$119,439.0	$6,427,140.1		$6,427,140.1		$6,427,140.1
22	0.3529	371343.0	$131,041.6	0	($7,427)	$123,614.7	$6,550,754.8		$6,550,754.8		$6,550,754.8
23	0.3662	369486.3	$135,315.0	0	($7,390)	$127,925.3	$6,678,680.1		$6,678,680.1		$6,678,680.1
24	0.3801	367638.9	$139,727.7	0	($7,353)	$132,375.0	$6,811,055.1		$6,811,055.1		$6,811,055.1
25	0.3944	365800.7	$144,284.4	0	($7,316)	$136,968.4	$6,948,023.4		$6,948,023.4		$6,948,023.4

APPENDIX F

GLACIAL ENERGY – ALTERNATIVE ELECTRIC SUPPLIER QUOTE

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District
Billing Address: Main Building 1445 State RT 31, Annandale, NJ 08801

Start Month:	Aug-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

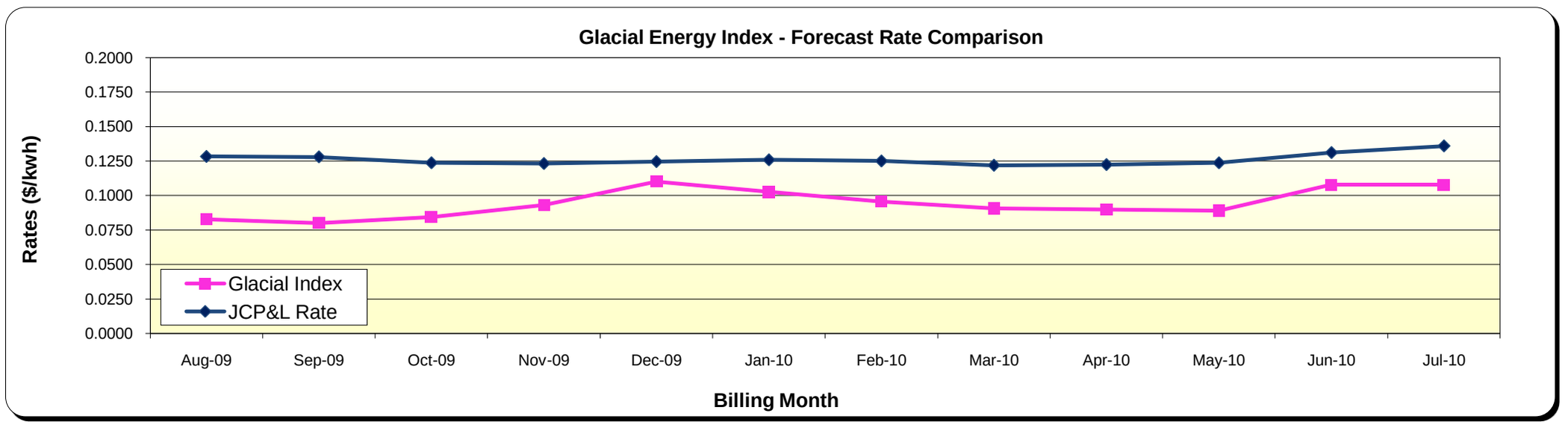
Avg Rate ($/kwh)*:	$	0.12540
Annual Utility Charges:	$	459,607
Glacial Energy Index:	$	0.09571
Glacial Charges:	$	350,803

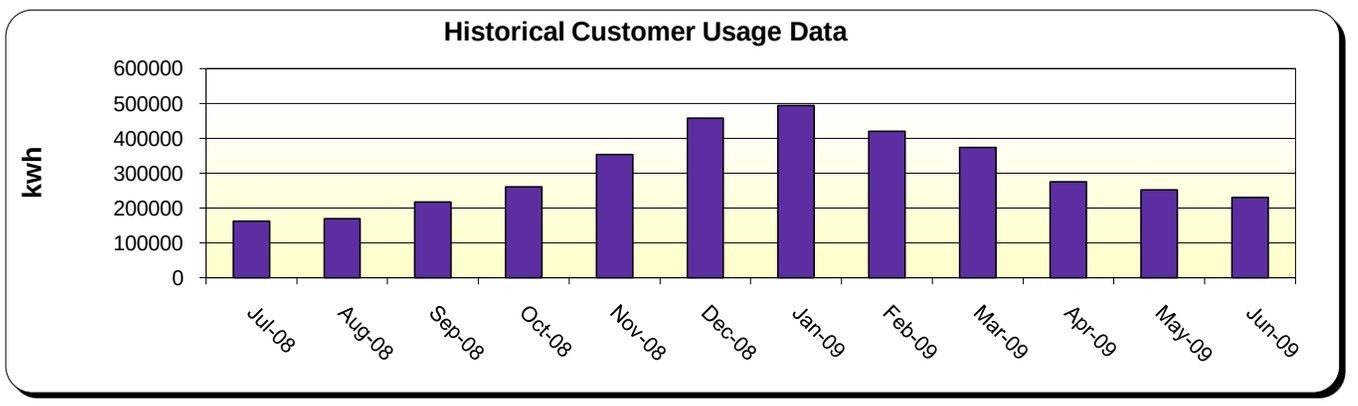
Forecasted Customer Usage Data Summary

Usage (kwh):	3,665,139
Avg Monthly Usage (kwh):	305,428
Peak Monthly kw:	1192
Peak Load Factor:	35%
Capacity PLC:	460
Transmission PLC:	473

Savings Summary

Estimated Savings vs. Utility	**$**	**108,804**
Savings (Glacial vs. Utility)		**24%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000644161	Main Building 1445 State RT 31, Annandale, NJ 08801

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.12828/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District
Billing Address: Main Building 1445 State RT 31, Annandale, NJ 08801

Historical Timeframe (mo.):	6
Start Month:	Jan-09
Number of LDC Accounts:	1

Estimated Historical Utility Charges

Avg Rate ($/kwh):	$	0.12377
Annual Utility Charges:	$	253,082

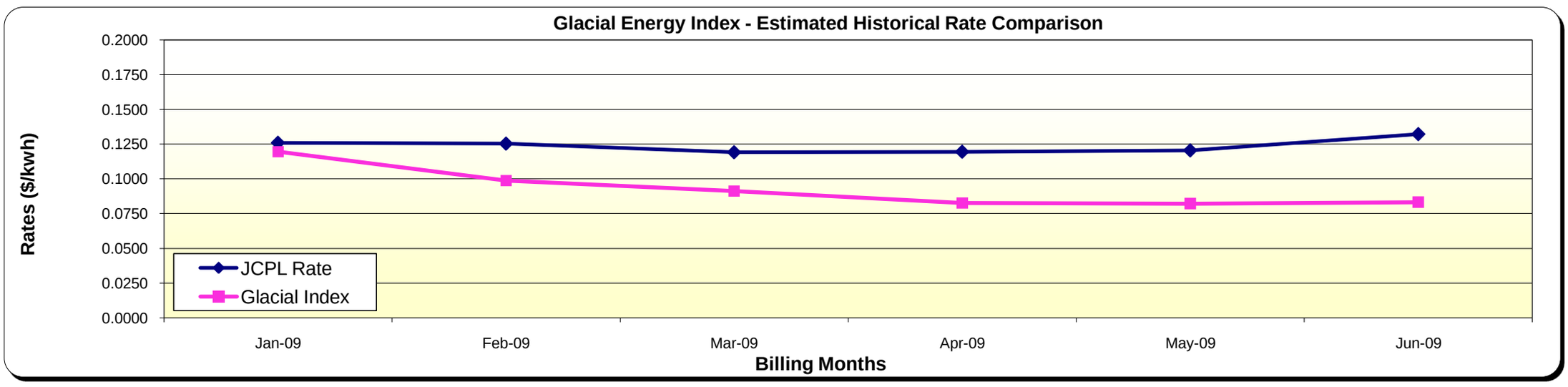
Glacial Energy Index:	$	0.09647
Glacial Charges:	$	197,270

6 month Period Summary

Usage (kwh):	2,044,781
Avg Monthly Usage (kwh):	340,797
Peak Monthly kw:	1,192
Peak Load Factor:	39%
Capacity PLC:	460
Transmission PLC:	473

Savings Summary

Estimated Savings vs. Utility	**$**	**55,812**
Savings (Glacial vs. Utility)		**22%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 605
Billing Address: Stadium 1445 State Route 31, Annandale, NJ 08801

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

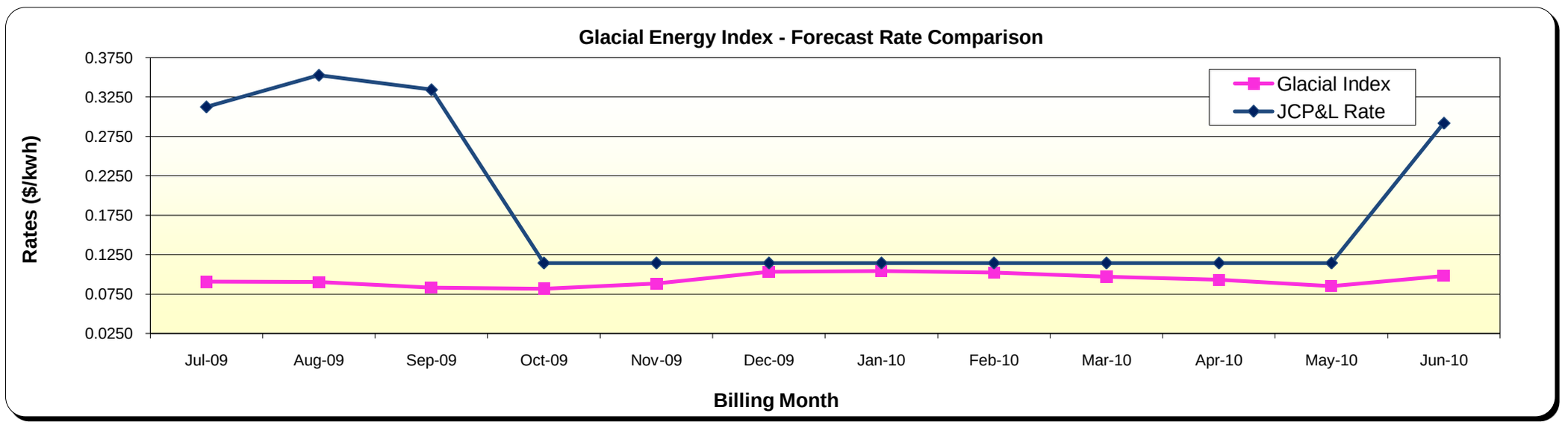
Avg Rate ($/kwh)*:	$	0.13471
Annual Utility Charges:	$	10,271
Glacial Energy Index:	$	0.09611
Glacial Charges:	$	7,328

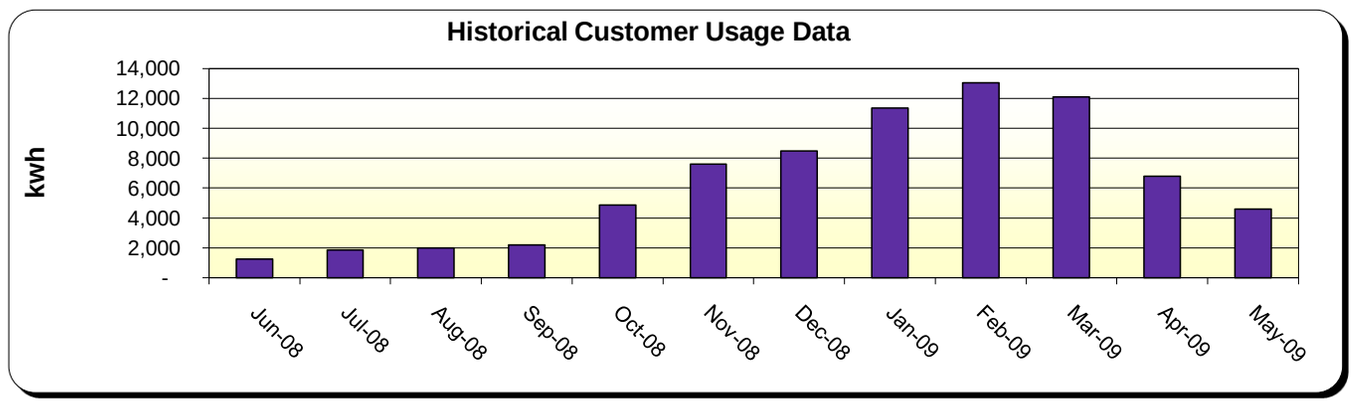
Forecasted Customer Usage Data Summary

Usage (kwh):	76,244
Avg Monthly Usage (kwh):	6,354
Peak Monthly kw:	80
Peak Load Factor:	11%
Capacity PLC:	5
Transmission PLC:	5

Savings Summary

Estimated Savings vs. Utility	**$**	**2,943**
Savings (Glacial vs. Utility)		**29%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000818605	Stadium 1445 State Route 31, Annandale, NJ 08801

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.3125/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 605
Billing Address: Stadium 1445 State Route 31, Annandale, NJ 08801

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

Avg Rate ($/kwh):	$	0.11208
Annual Utility Charges:	$	6,324

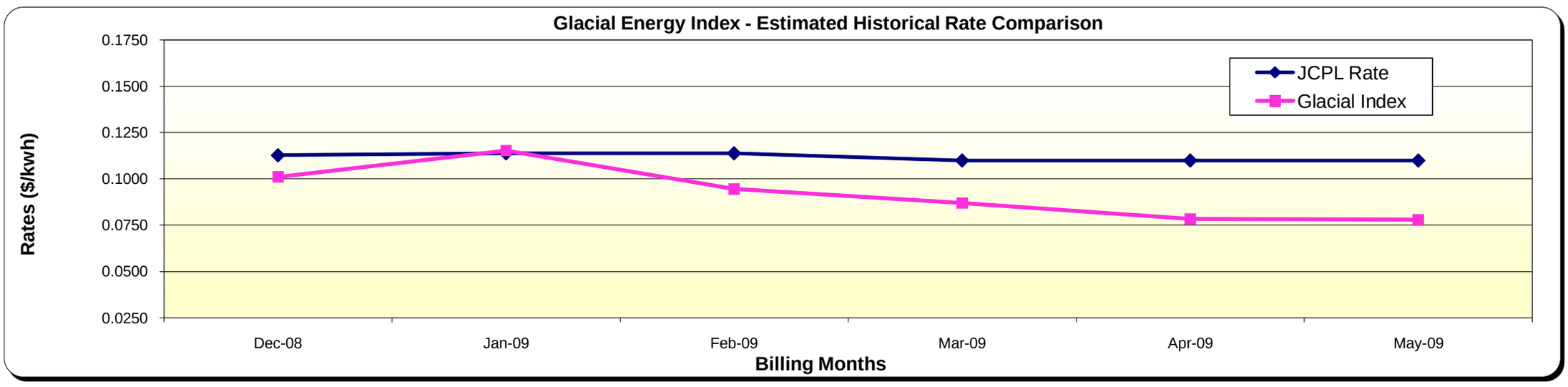
Glacial Energy Index:	$	0.09477
Glacial Charges:	$	5,347

6 month Period Summary

Usage (kwh):	56,420
Avg Monthly Usage (kwh):	9,403
Peak Monthly kw:	80
Peak Load Factor:	16%
Capacity PLC:	5
Transmission PLC:	5

Savings Summary

Estimated Savings vs. Utility	**$**	**977**
Savings (Glacial vs. Utility)		**15%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 587
Billing Address: Marqee Sign 1445 State Route 31, Annandale, NJ 08801

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

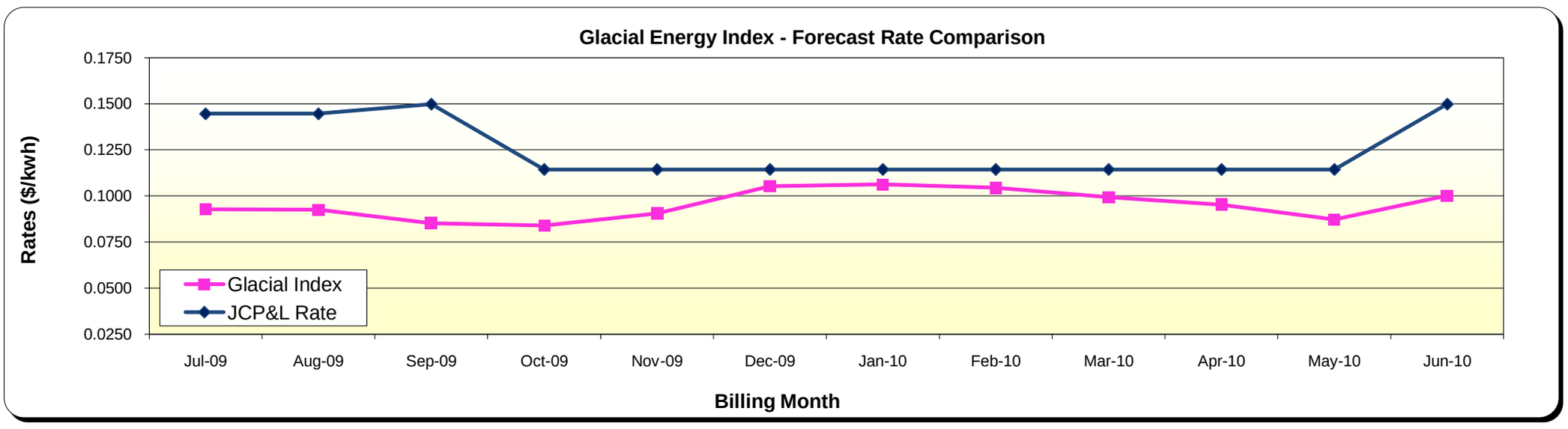
Avg Rate ($/kwh)*:	$	0.12500
Annual Utility Charges:	$	1,120
Glacial Energy Index:	$	0.09530
Glacial Charges:	$	854

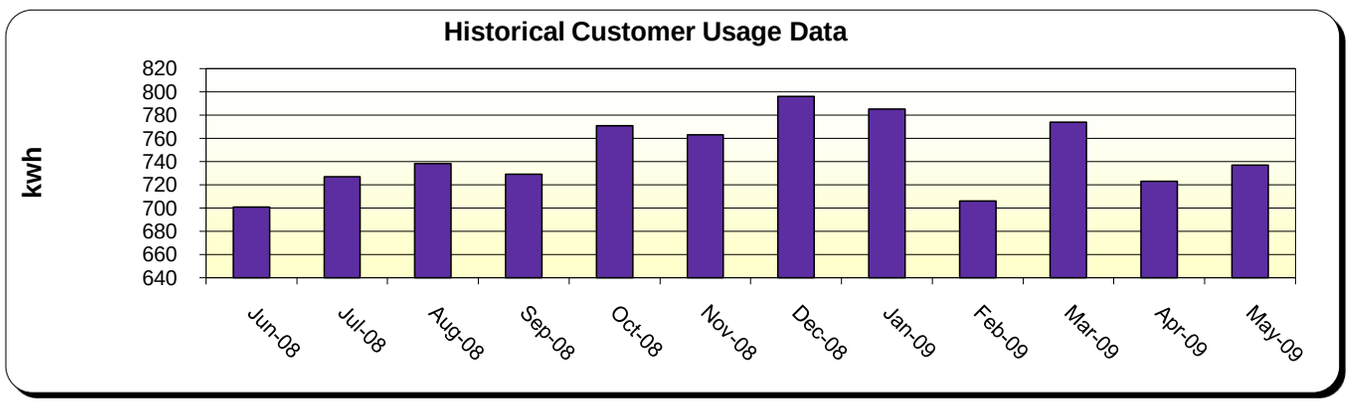
Forecasted Customer Usage Data Summary

Usage (kwh):	8,959
Avg Monthly Usage (kwh):	747
Peak Monthly kw:	2
Peak Load Factor:	59%
Capacity PLC:	2
Transmission PLC:	2

Savings Summary

Estimated Savings vs. Utility	**$**	**266**
Savings (Glacial vs. Utility)		**24%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000818587	Marqee Sign 1445 State Route 31, Annandale, NJ 08801

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.14458/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 587
Billing Address: Marqee Sign 1445 State Route 31, Annandale, NJ 08801

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

Avg Rate ($/kwh):	$	0.11176
Annual Utility Charges:	$	505

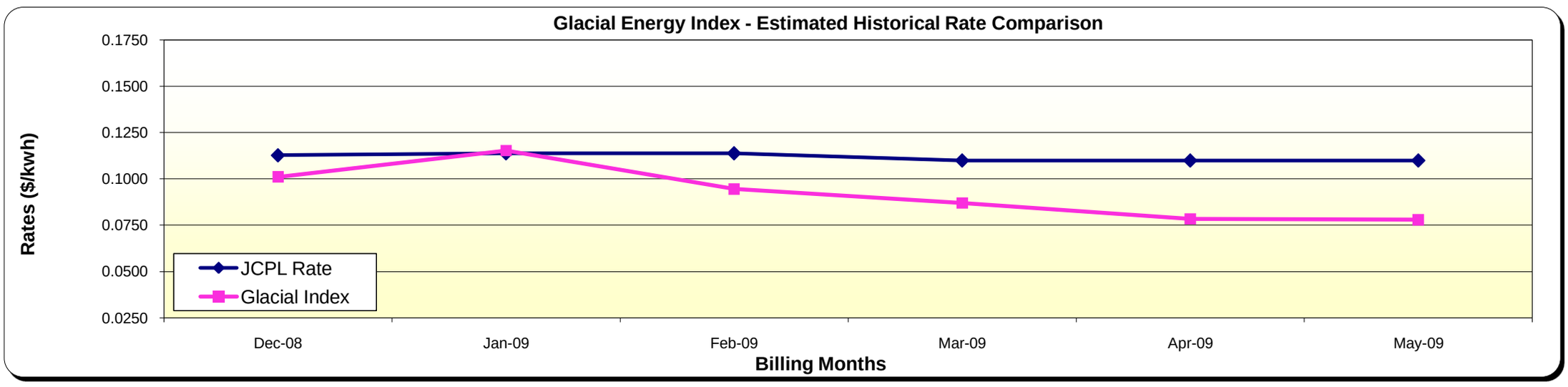
Glacial Energy Index:	$	0.09271
Glacial Charges:	$	419

6 month Period Summary

Usage (kwh):	4,521
Avg Monthly Usage (kwh):	754
Peak Monthly kw:	2
Peak Load Factor:	60%
Capacity PLC:	2
Transmission PLC:	2

Savings Summary

Estimated Savings vs. Utility	**$**	**86**
Savings (Glacial vs. Utility)		**17%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 716
Billing Address: Voorhees High School Board of Ed 256 Route 513, Glen Gardner, NJ 08826

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

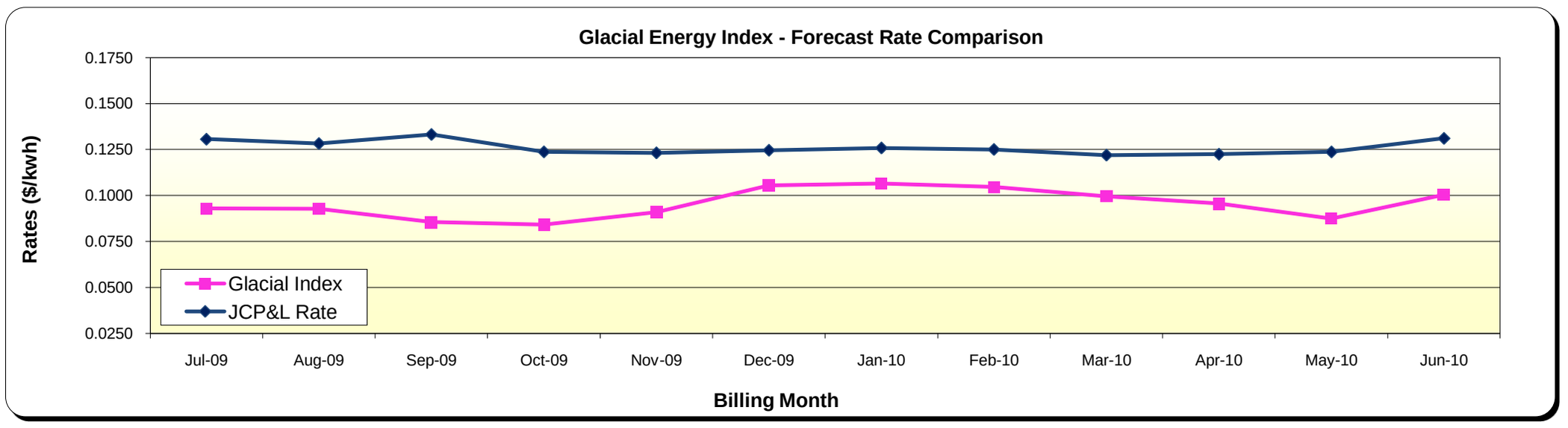
Avg Rate ($/kwh)*:	$	0.12635
Annual Utility Charges:	$	393,783
Glacial Energy Index:	$	0.09526
Glacial Charges:	$	296,888

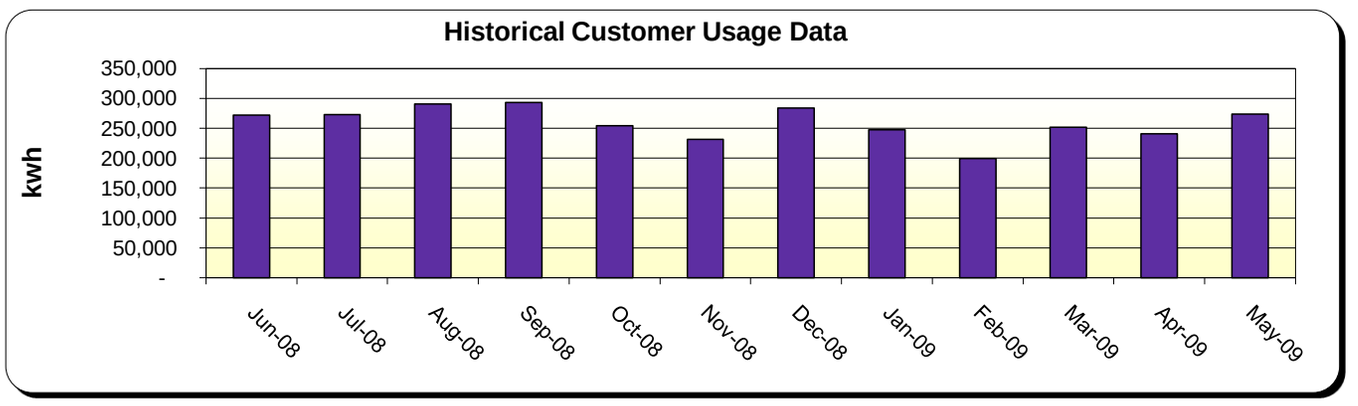
Forecasted Customer Usage Data Summary

Usage (kwh):	3,116,499
Avg Monthly Usage (kwh):	259,708
Peak Monthly kw:	835
Peak Load Factor:	43%
Capacity PLC:	651
Transmission PLC:	670

Savings Summary

Estimated Savings vs. Utility	**$**	**96,895**
Savings (Glacial vs. Utility)		**25%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000595716	Voorhees High School Board of Ed 256 Route 513, Glen Gardner, NJ 08826

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.13065/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 716
Billing Address: Voorhees High School Board of Ed 256 Route 513, Glen Gardner, NJ 08826

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

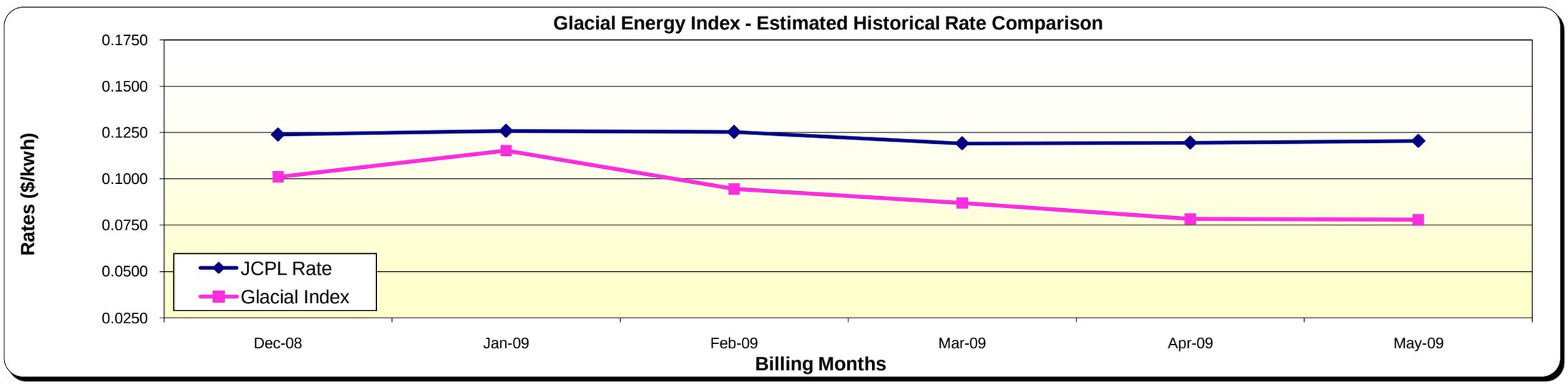
Avg Rate ($/kwh):	$	0.12233
Annual Utility Charges:	$	183,189
Glacial Energy Index:	$	0.09231
Glacial Charges:	$	138,231

6 month Period Summary

Usage (kwh):	1,497,530
Avg Monthly Usage (kwh):	249,588
Peak Monthly kw:	835
Peak Load Factor:	41%
Capacity PLC:	651
Transmission PLC:	670

Savings Summary

Estimated Savings vs. Utility	**$**	**44,959**
Savings (Glacial vs. Utility)		**25%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 718
Billing Address: North Hunterdon Reg HS Bd of ED RT 513, Glen Gardner, NJ 08826

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

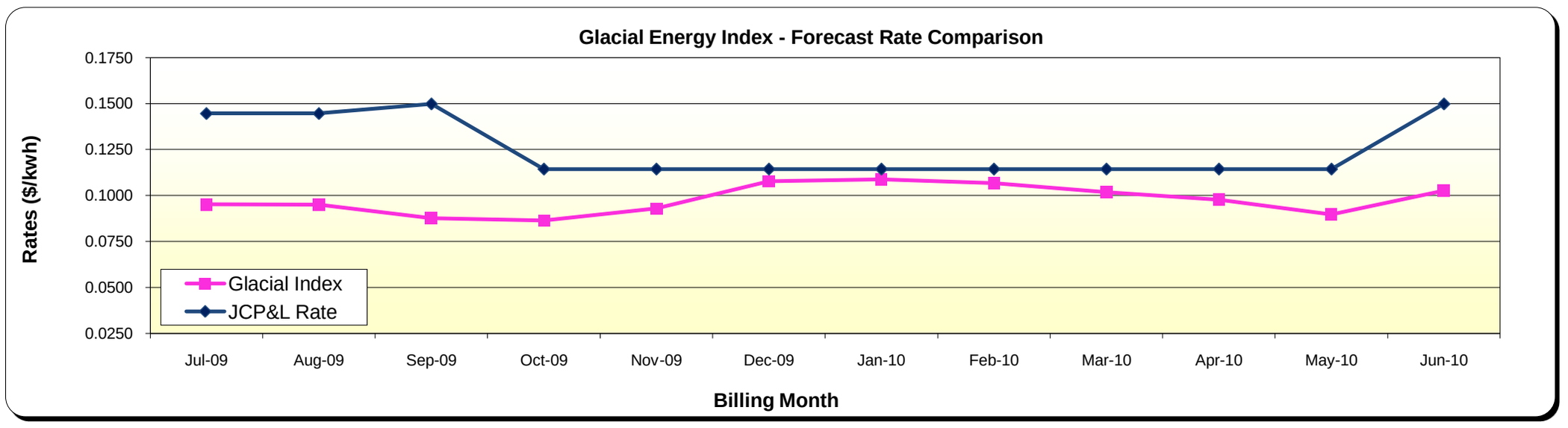
Avg Rate ($/kwh)*:	$	0.13428
Annual Utility Charges:	$	569
Glacial Energy Index:	$	0.09598
Glacial Charges:	$	406

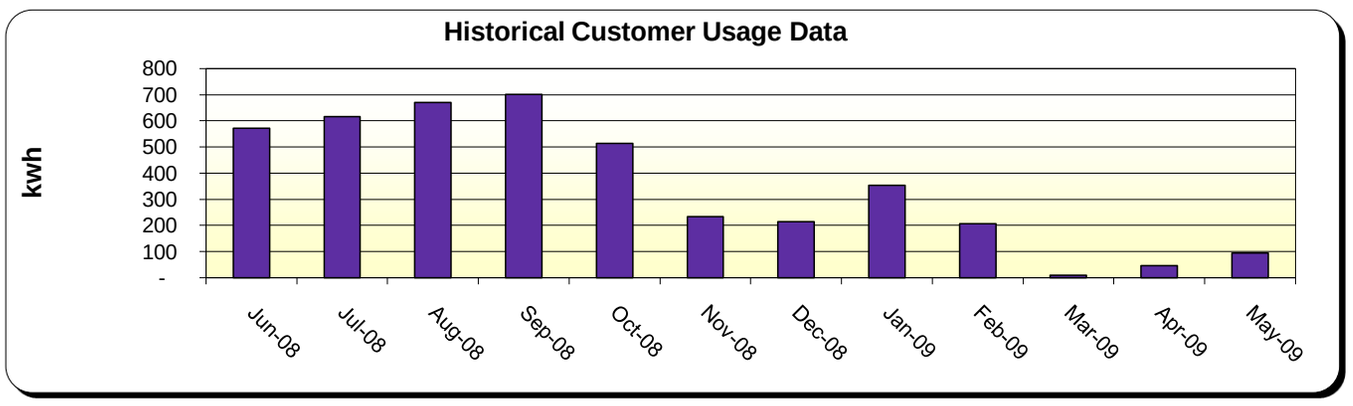
Forecasted Customer Usage Data Summary

Usage (kwh):	4,234
Avg Monthly Usage (kwh):	353
Peak Monthly kw:	1
Peak Load Factor:	34%
Capacity PLC:	1
Transmission PLC:	1

Savings Summary

Estimated Savings vs. Utility	**$**	**162**
Savings (Glacial vs. Utility)		**29%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000595718	North Hunterdon Reg HS Bd of ED RT 513, Glen Gardner, NJ 08826

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.14458/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 718
Billing Address: North Hunterdon Reg HS Bd of ED RT 513, Glen Gardner, NJ 08826

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

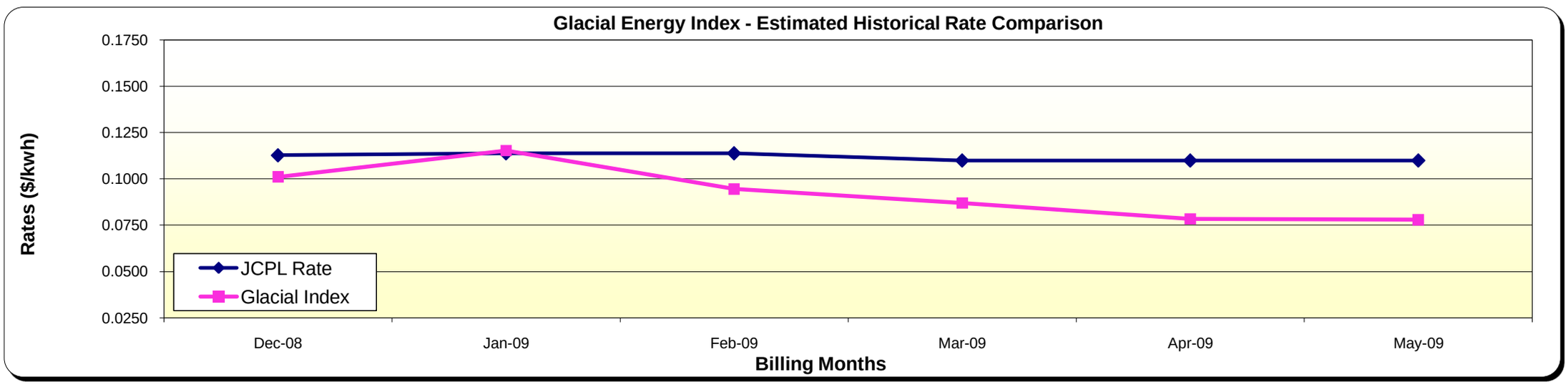
Avg Rate ($/kwh):	$	0.11298
Annual Utility Charges:	$	105
Glacial Energy Index:	$	0.10142
Glacial Charges:	$	94

6 month Period Summary

Usage (kwh):	925
Avg Monthly Usage (kwh):	154
Peak Monthly kw:	1
Peak Load Factor:	15%
Capacity PLC:	1
Transmission PLC:	1

Savings Summary

Estimated Savings vs. Utility	**$**	**11**
Savings (Glacial vs. Utility)		**10%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 612
Billing Address: Butler Building 1445 State Route 31, Annandale, NJ 08801

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

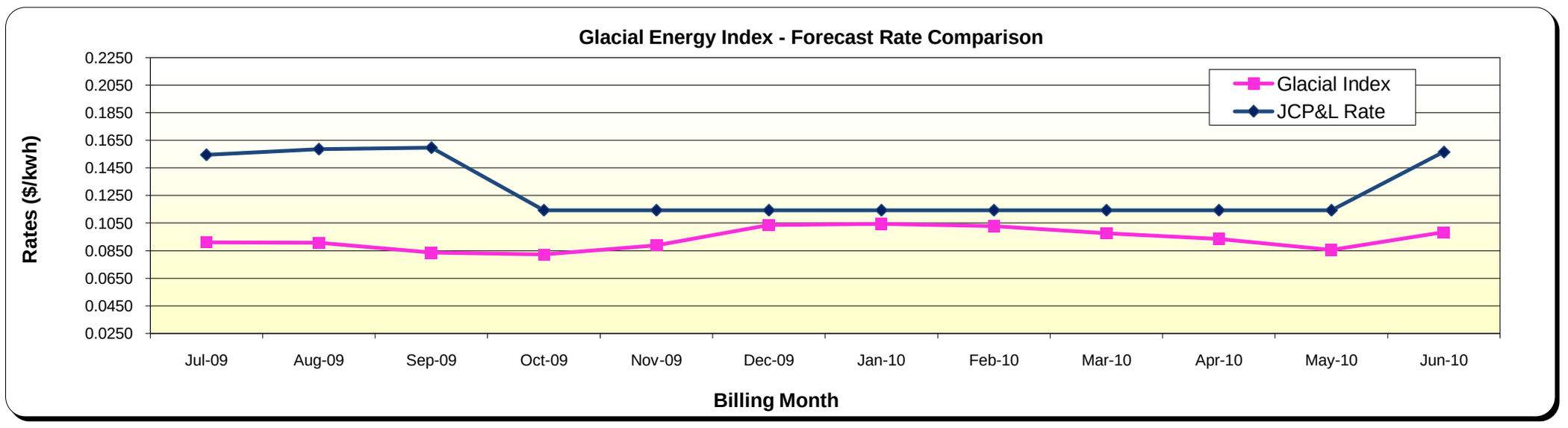
Avg Rate ($/kwh)*:	$	0.12300
Annual Utility Charges:	$	4,296
Glacial Energy Index:	$	0.09611
Glacial Charges:	$	3,357

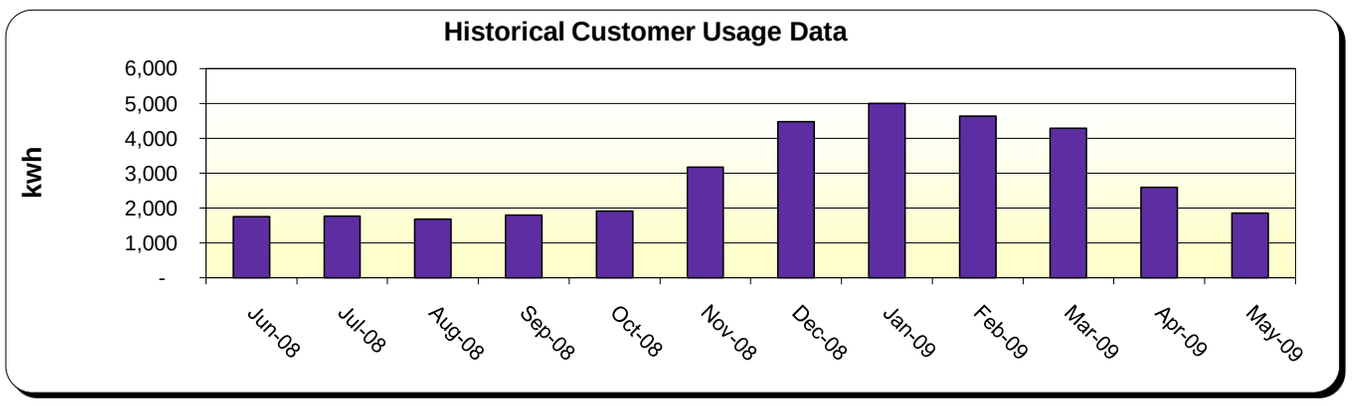
Forecasted Customer Usage Data Summary

Usage (kwh):	34,928
Avg Monthly Usage (kwh):	2,911
Peak Monthly kw:	14
Peak Load Factor:	28%
Capacity PLC:	3
Transmission PLC:	3

Savings Summary

Estimated Savings vs. Utility	**$**	**939**
Savings (Glacial vs. Utility)		**22%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000818612	Butler Building 1445 State Route 31, Annandale, NJ 08801

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.15462/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 612
Billing Address: Butler Building 1445 State Route 31, Annandale, NJ 08801

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

Avg Rate ($/kwh):	$	0.11217
Annual Utility Charges:	$	2,562

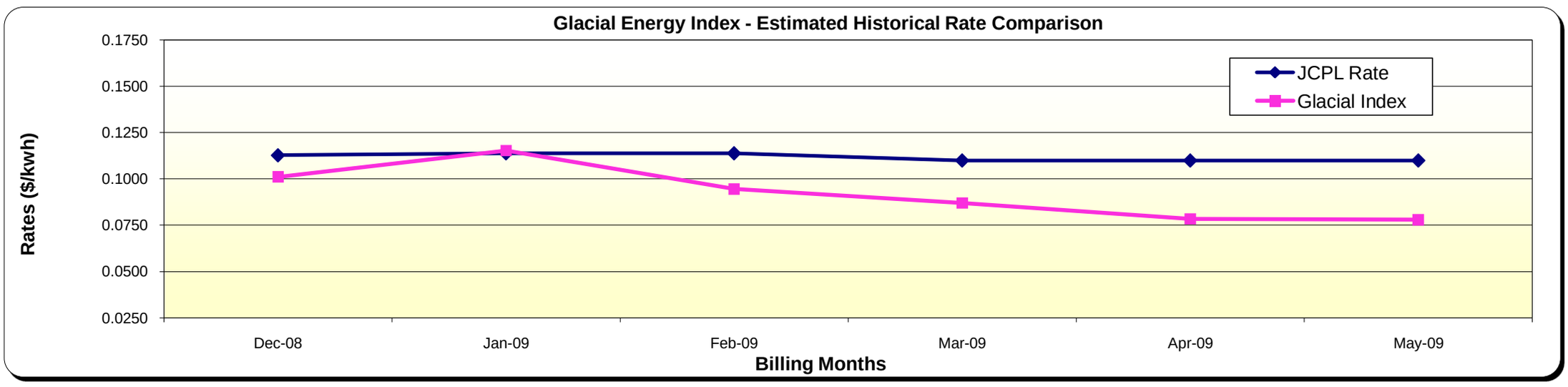
Glacial Energy Index:	$	0.09575
Glacial Charges:	$	2,187

6 month Period Summary

Usage (kwh):	22,839
Avg Monthly Usage (kwh):	3,807
Peak Monthly kw:	14
Peak Load Factor:	37%
Capacity PLC:	3
Transmission PLC:	3

Savings Summary

Estimated Savings vs. Utility	**$**	**375**
Savings (Glacial vs. Utility)		**15%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 609
Billing Address: Transportation Garage 1445 State Route 31, Annandale, NJ 08801

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

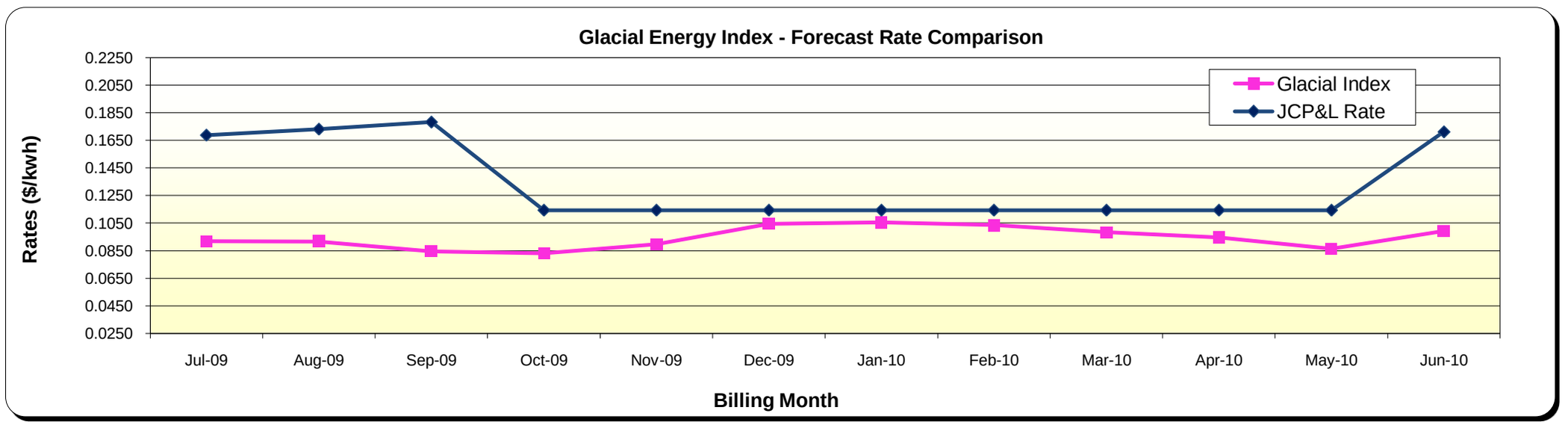
Avg Rate ($/kwh)*:	$	0.12862
Annual Utility Charges:	$	3,432
Glacial Energy Index:	$	0.09660
Glacial Charges:	$	2,578

Forecasted Customer Usage Data Summary

Usage (kwh):	26,687
Avg Monthly Usage (kwh):	2,224
Peak Monthly kw:	18
Peak Load Factor:	17%
Capacity PLC:	4
Transmission PLC:	4

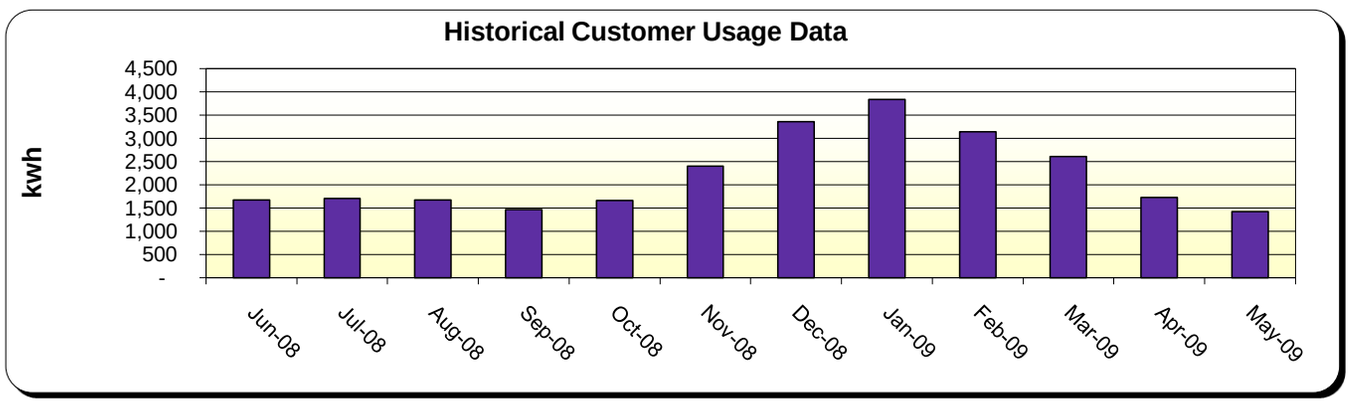
Savings Summary

Estimated Savings vs. Utility	**$**	**855**
Savings (Glacial vs. Utility)		**25%**



Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)



	LDC Account No:	Physical Address:
1	'08004766090000818609	Transportation Garage 1445 State Route 31, Annandale, NJ 08801

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.16869/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 609
Billing Address: Transportation Garage 1445 State Route 31, Annandale, NJ 08801

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

Avg Rate ($/kwh):	$	0.11225
Annual Utility Charges:	$	1,807

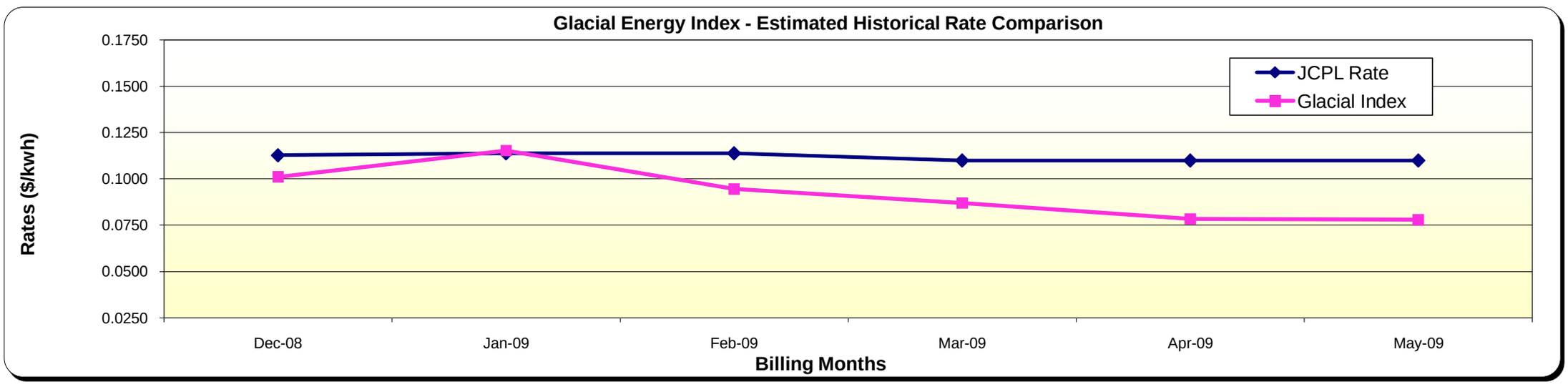
Glacial Energy Index:	$	0.09642
Glacial Charges:	$	1,552

6 month Period Summary

Usage (kwh):	16,096
Avg Monthly Usage (kwh):	2,683
Peak Monthly kw:	18
Peak Load Factor:	20%
Capacity PLC:	4
Transmission PLC:	4

Savings Summary

Estimated Savings vs. Utility	**$**	**255**
Savings (Glacial vs. Utility)		**14%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Secure your savings today!

Contract Summary - Forecasted Price Comparison

Company Name: North Hunterdon and Voorhees School District 717
Billing Address: North Hunterdon Reg HS Bd of ED RT 513, Glen Gardner, NJ 08826

Start Month:	Jul-09
Number of LDC Accounts:	1
Retail Margin Adder:	N/A

Estimated Rate Comparison over the next 12 months

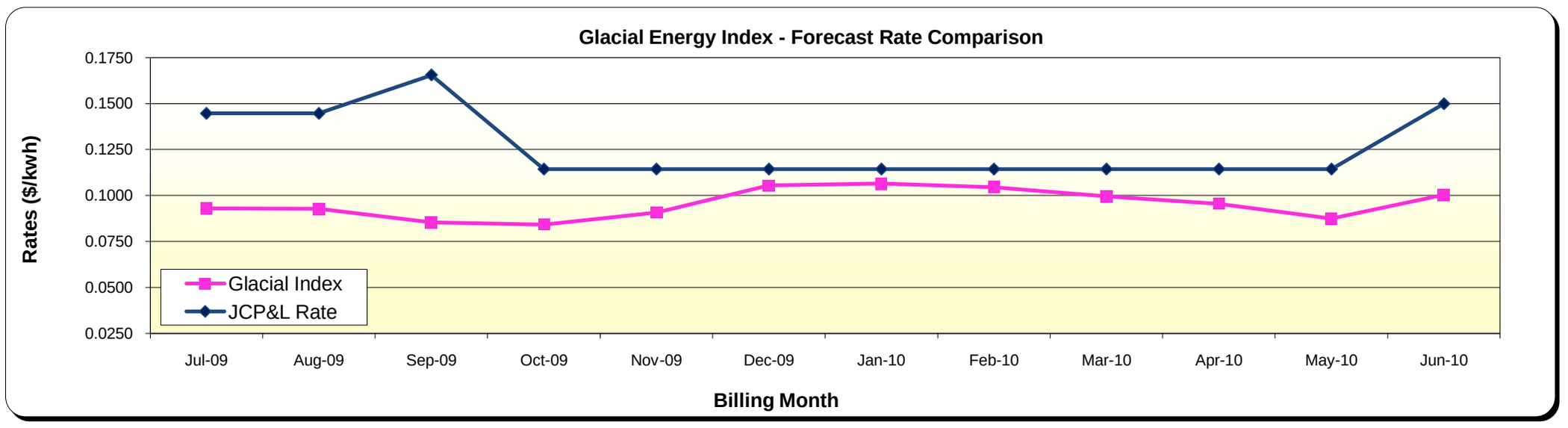
Avg Rate ($/kwh)*:	$	0.12699
Annual Utility Charges:	$	1,091
Glacial Energy Index:	$	0.09534
Glacial Charges:	$	819

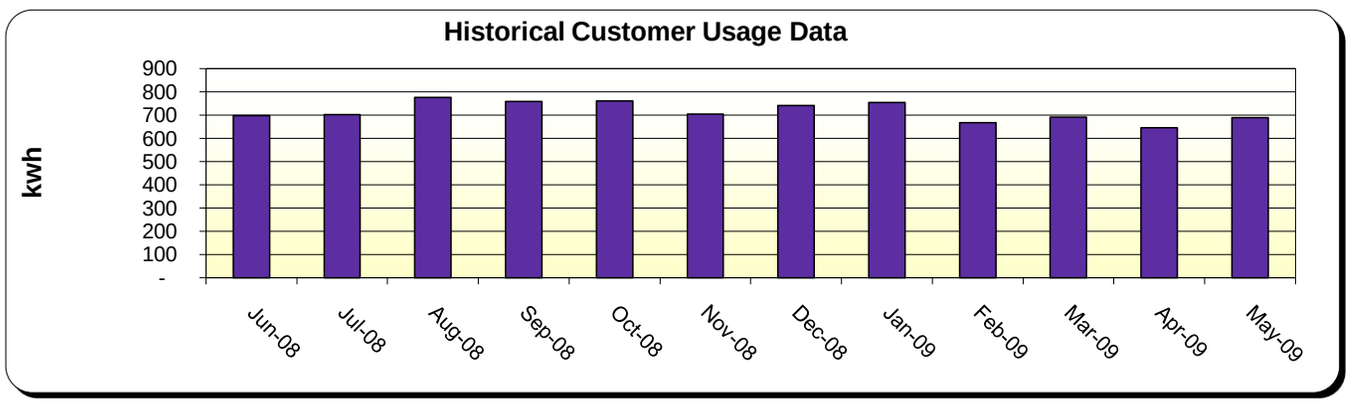
Forecasted Customer Usage Data Summary

Usage (kwh):	8,595
Avg Monthly Usage (kwh):	716
Peak Monthly kw:	12
Peak Load Factor:	8%
Capacity PLC:	2
Transmission PLC:	2

Savings Summary

Estimated Savings vs. Utility	**$**	**272**
Savings (Glacial vs. Utility)		**25%**





Glacial Index Includes:
a. Estimated weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

	LDC Account No:	Physical Address:
1	'08004766090000595717	North Hunterdon Reg HS Bd of ED RT 513, Glen Gardner, NJ 08826

1. The Glacial Index price is based in large part on forecasted ISO charges and estimated future zonal energy prices.

2. The forward tariff rates are based on the latest, pending or estimated utility rates (inclusive of NJ SUT), applicable for this rate schedule(s).

Rate listed is an average over the next 12 months. Your current average utility rate for July 2009 is $0.14458/kwh.

graph above, beyond 7/31/2009 reflect published rate changes and/or rate estimations.

Savings Analysis Proposal - JCP&L

Glacial Energy

This proposal illustrates how you can maximize your energy cost savings by choosing Glacial Energy as your preferred electricity supplier.
This proposal is based on your organization's estimated usage (kwh) and demand (kw) over the coming year.

Contract Summary - Historical Utility Charges

Company Name: North Hunterdon and Voorhees School District 717
Billing Address: North Hunterdon Reg HS Bd of ED RT 513, Glen Gardner, NJ 08826

Historical Timeframe (mo.):	6
Start Month:	Dec-08
Number of LDC Accounts:	1

Estimated Historical Utility Charges

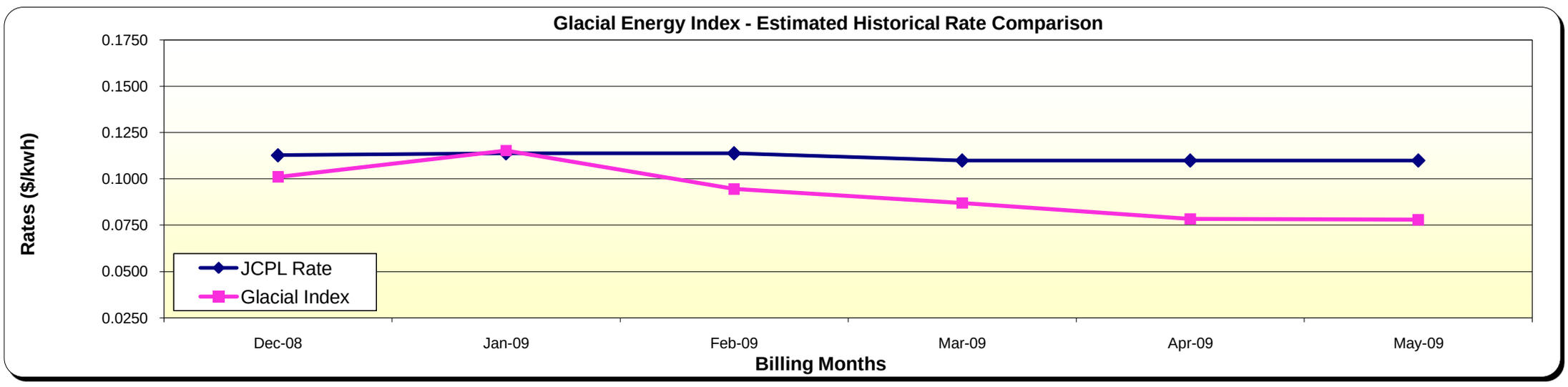
Avg Rate ($/kwh):	$	0.11180
Annual Utility Charges:	$	468
Glacial Energy Index:	$	0.09297
Glacial Charges:	$	389

6 month Period Summary

Usage (kwh):	4,187
Avg Monthly Usage (kwh):	698
Peak Monthly kw:	12
Peak Load Factor:	8%
Capacity PLC:	2
Transmission PLC:	2

Savings Summary

Estimated Savings vs. Utility	**$**	**79**
Savings (Glacial vs. Utility)		**17%**



Glacial Index Includes:
a. Estimated Weighted average Wholesale Energy price
b. Ancillary Services & requirements
c. Zonal Congestion
d. Market Scheduling and Forecasting Fees
e. PJM ISO Fees
f. Transmission Losses & Charges
g. Capacity Charges
h. NJ SUT Taxes

Glacial Index Excludes:
a. Any charges from the LDC companies - Wires
b. Non NJ SUT Taxes (SUT rates & charges noted above)
c. Unaccounted for Energy (UFE)

1. The historic tariff rate comparison is based on historical usage and current, pending or estimated utility rates (inclusive of NJ SUT) for the appropriate rate schedule(s).

APPENDIX G

NJ SMARTSTART INCENTIVES INFORMATION AND WORKSHEETS

New Jersey's Clean Energy PROGRAM™
Your Power to Save
njcleanenergy.com

New Jersey SmartStart BUILDINGS®

BPU

2009 Prescriptive Lighting Application

Customer Information

Company	Electric Utility Serving Applicant	Electric Account No.	Installation Date
Facility Address	City	State	Zip
Type of Project ❑ New Construction ❑ Renovation ❑ Equipment Replacement ❑ School		Size of Building	
Company Mailing Address	City	State	Zip
Contact Person (Name/Title)	Telephone No. ( )	Fax No. ( )	
Incorporated? ❑ Yes ❑ No ❑ Exempt	Federal Tax ID# or SSN	Email Address	
Incentive Payment to ❑ Customer ❑ Contractor ❑ Other	Please assign payment to contractor/vendor/other indicated below Customer Signature		

Payee Information (Must submit W-9 form with application)

Company	Contact Name		Incorporated? ❑ Yes ❑ No	Federal Tax ID#
Street Address	City	State	Zip	Telephone No. ( )

Email Address

Contractor/Vendor Information (if different from Payee)

Company	Contact Name		Incorporated? ❑ Yes ❑ No	Federal Tax ID#
Street Address	City	State	Zip	Telephone No. ( )

Email Address

Prescriptive Lighting Information

Total Incentives (per attached Worksheet calculations):

$_____

Note: Prescriptive Lighting Worksheet must accompany this application.

Specific Program Requirements* These requirements are in addition to the Program Terms and Conditions.

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Market Manager.
3. Incentives for T-5 and T-8 lamps with electronic ballasts are available only for fixtures with a Total Harmonic Distortion of ≤ 20%.
4. All eligible lighting devices must be UL listed.
5. Requirements for CFL fixtures (must meet all requirements):
   - Fixtures must be new and Energy Star qualified
   - Fixtures must have replaceable electronic ballasts
   - Total Harmonic Distortion (THD) must not exceed 33%
   - Power factor of the ballast must be no less than 90%
   - The manufacturer must warrant all fixtures for a minimum of 3 years. Warranty does not pertain to lamps or photocells not physically part of the fixture.
   - The installer must warrant installation of fixtures for a minimum of 1 year.
6. Pulse Start Metal Halide (including pole-mounted parking lot lighting) must have a 12% minimum wattage reduction.
7. T-5 or T-8 Fixtures replacing incandescent or T-12 fluorescent fixtures greater than 250 watt or High Intensity Discharge shall comply as follows:

7.1 T-5 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.0; have reflectivity greater than or equal to 91%; have a minimum 2 lamps; and be designated as F54T5 HO.

7.2 T-8 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.14; have reflectivity greater than or equal to 91%; have a minimum of 4 lamps; and be designated as F32T8, minimum 32 watts.

7.3 T-8 to T-8 replacement requires delamping and new reflectors resulting in a more efficient light system with maintained light levels.

ACKNOWLEDGEMENT

_____

CUSTOMER'S SIGNATURE

By signing, I certify that I have read, understand and agree to the Specific Program Requirements/Terms and Conditions listed on this application form, I will also submit for approval a properly completed application package, which includes this signed application, worksheet (if applicable), manufacturer's specification sheets and complete utility bill (name and address on utility bill must match name and address on application).

Prescriptive Lighting Measures and Incentives*

Type of Fixture	Incentive
Recessed and Surface-Mounted Compact Fluorescents (New Fixtures Replacing Incandescent Fixtures Only): Only available for hard-wired, electronically ballasted new fixtures with rare earth phosphor lamps and 4-pin based tubes (including: twin tube, quad tube, triple tube, 2D or circline lamps), THD<33% and BF>0.9	$25 per 1-lamp fixture $30 per 2-lamp or more fixture
High-Efficiency Fluorescent Fixtures:	
For retrofit of T-12 fixtures to T-5 or T-8 with electronic ballasts	$10 per fixture (1 & 2 lamps retrofit) $20 per fixture (3 & 4 lamps retrofit)

For replacement of fixtures with new T-5 or T-8 fixtures

Type of Old Fixture	Wattage of Old Fixture	Type of New Fixture	Incentive Per Fixture Removed
HID, T-12, Incandescent	≥ 1000 Watts	T-5, T-8	$284
HID, T-12, Incandescent	400-999 Watt	T-5, T-8	$100
HID, T-12, Incandescent	250-399 Watt	T-5, T-8	$50
HID only	175-249 Watt	T-5, T-8	$43
HID only	100-174 Watt	T-5, T-8	$30
HID only	75-99 Watt	T-5, T-8	$16
T-12 only	<250 Watt	T-5, T-8 (1 & 2 lamp)	$25
T-12 only	<250 Watt	T-5, T-8 (3 & 4 lamp)	$30

For retrofit of T-8 fixtures by permanent delamping & new reflectors	**$20 per fixture**
New Construction & Complete Renovation	**Performance based only**
LED Exit Signs (new fixtures only): For existing facilities with connected load ≤75 kW	**$20 per fixture**
For existing facilities with connected load ≥ 75 kW	**$10 per fixture**
Pulse Start Metal Halide (for fixtures ≥ 150 watts)	**$25 per fixture (includes parking lot lighting)**
Parking lot low bay - LED	**$43 per fixture**
T-12 to T-8 fixtures by permanent delamping & new reflectors	**$30 per fixture**

Mail or fax your application package DIRECTLY to the Commercial/Industrial Market Manager.

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Phone: 866-657-6278 · Fax: 732-855-0422

Visit our web site: www.NJCleanEnergy.com

*Incentives/Requirements subject to change.

NJ SmartStart Buildings®

Program Terms and Conditions

Definitions:

Design Incentives – Incentives that may be offered to design professionals by the Program.

Design Services – Services that may be offered to design professionals under the Program.

Energy-Efficient Measures – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

New Jersey Utilities – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

Administrator – New Jersey Board of Public Utilities, Office of Clean Energy

Participating Customers – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

Product Installation or Equipment Installation – Installation of the Energy-Efficient Measures.

Market Manager – TRC Energy Services (see below). The NJ Board of Public Utilities has transferred responsibility for the NJ SmartStart Buildings Program from the NJ Utilities to TRC.

Program – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

Program Incentives – Refers to the amount or level of incentive that the Program provides to participating customers pursuant to the Program offered herein (see description below under "Incentive Amount" heading).

Program Offer – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Market Manager if you are uncertain about project eligibility.

Application and Eligibility Process – The Program pays incentives after the installation of qualified energy efficient measures that were pre-approved (for exceptions to this condition, please refer to "exceptions for approval".) In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer's cut sheets (where appropriate). This information must be submitted to the Market Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentives to the sales vendor. This application package must be received by the Market Manager on or before December 31, 2009 in order to be eligible for 2009 incentives. The Market Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Market Manager's approval letter is not eligible for an incentive. The Market Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or Agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

Exceptions for Approval – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than $5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Market Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Market Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

Post Installation Approval – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Market Manager's initial approval letter.

Please refer to the Program Guide on the NJCleanEnergy.com/ssb website for the complete Application and Eligibility Process.

The Market Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. (Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.)

Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not be eligible for incentives offered through this program.

Incentive Amount – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Market Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to $500,000 per utility account in a calendar year. Contact the Market Manager regarding any questions.

Tax Liability – The Market Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their Federal Tax Identification number or social security number to the Market Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (Business Assistance or Incentive Clearance Certificate) that is dated within 90 days of equipment installation

Endorsement – The Market Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

Warranties – THE MARKET MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

Limitation of Liability – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Market Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Market Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Market Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Market Manager under this Program shall be individual, and not joint and/or several.

Assignment – The Participating Customer may assign Program Incentive payments to a specified vendor.

Participating Customer's Certification – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

Termination – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

Acknowledgement – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Market Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.

2009 Prescriptive Lighting Incentive Worksheet

Customer Information

Company	Facility Address
☐ Check here if multiple worksheets are being submitted for one project/building.	Date Submitted

Prescriptive Lighting Information

For additional fixtures, attach additional sheets and check here ☐

Reason N–New R–Replaced	**Fixture Type Installed**	**Fixture Type Removed**	**Location** (Bldg/Rm)	**Size of Replaced Lamps in Watts**	**A Incentive Per Fixture** (Table)	**B # of Units**	**Total Incentives (AxB)**
(Examples) R	2x4 3L T-5	2x4 3L T-12	Office		$20	8	$20 x 8 = $160
R	2x2 2L T-8	2x2 2L T-12	Office		$10	10	$10 x 10 = $100
R	28w CFL	100w Incan.	Supply Room		$25	3	$25 x 3 = $75
R	250w Pulse Start Metal Halide	400w Mercury Vapor	Warehouse		$45	3	$45 x 3 = $135
					Total (including additional sheets)		

Specific Program Requirements* These requirements are in addition to the Program Terms and Conditions.

1. Please refer to the program guide for additional applicable technical requirements.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Market Manager.
3. Incentives for T-5 and T-8 lamps with electronic ballasts are available only for fixtures with a Total Harmonic Distortion of ≤ 20%.
4. All eligible lighting devices must be UL listed.
5. Requirements for CFL fixtures (must meet all requirements):
   - Fixtures must be new and Energy Star qualified
   - Fixtures must have replaceable electronic ballasts
   - Total Harmonic Distortion (THD) must not exceed 33%
   - Power factor of the ballast must be no less than 90%
   - The manufacturer must warrant all fixtures for a minimum of 3 years. Warranty does not pertain to lamps or photocells not physically part of the fixture.
   - The installer must warrant installation of fixtures for a minimum of 1 year.
6. Pulse Start Metal Halide (including pole-mounted parking lot lighting) must have a 12% minimum wattage reduction.
7. T-5 or T-8 Fixtures replacing incandescent or T-12 fluorescent fixtures greater than 250 watt or High Intensity Discharge shall comply as follows:

7.1 T-5 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.0; have reflectivity greater than or equal to 91%; have a minimum 2 lamps; and be designated as F54T5 HO.

7.2 T-8 fixtures replacing T-12 fluorescent or incandescent fixtures 250 watts or greater, or HID fixtures shall have a ballast factor greater than or equal to 1.14; have reflectivity greater than or equal to 91%; have a minimum of 4 lamps; and be designated as F32T8, minimum 32 watts.

7.3 T-8 to T-8 replacement requires delamping and new reflectors resulting in a more efficient light system with maintained light levels.

ACKNOWLEDGEMENT

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Endorsement – The Market Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

Warranties – THE MARKET MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

Limitation of Liability – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Market Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Market Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Market Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Market Manager under this Program shall be individual, and not joint and/or several.

Assignment – The Participating Customer may assign Program Incentive payments to a specified vendor.

Participating Customer's Certification – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

Termination – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

Acknowledgement – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Market Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.

New Jersey's Clean Energy PROGRAM™
Your Power to Save
njcleanenergy.com

New Jersey SmartStart BUILDINGS®

BPU

2009 Lighting Controls Application

Customer Information

Company	Electric Utility Serving Applicant	Electric Account No.	Installation Date
Facility Address	City	State	Zip
Type of Project ❑ New Construction ❑ Renovation ❑ Equipment Replacement ❑ School		Size of Building	
Company Mailing Address	City	State	Zip
Contact Person (Name/Title)	Telephone No. ( )	Fax No. ( )	
Incorporated? ❑ Yes ❑ No ❑ Exempt	Federal Tax ID# or SSN	Email Address	
Incentive Payment to ❑ Customer ❑ Contractor ❑ Other	Please assign payment to contractor/vendor/other indicated below Customer Signature		

Payee Information (Must submit W-9 form with application)

Company	Contact Name		Incorporated? ❑ Yes ❑ No	Email Address Federal Tax ID#
Street Address	City	State	Zip	Telephone No. ( )

Contractor/Vendor Information (if different from Payee)

Company	Contact Name		Incorporated? ❑ Yes ❑ No	Email Address Federal Tax ID#
Street Address	City	State	Zip	Telephone No. ( )

Lighting Control Information

Total Incentives (per attached Worksheet calculations):

$_____

Use Lighting Controls Incentive Worksheet.

Specific Program Requirements* These requirements are in addition to the Program Terms and Conditions.

1. Please refer to the program guide for additional applicable technical requirements, including special requirements for lighting controls.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Market Manager.
3. All lighting controls eligible for incentives must be UL listed.
4. Lighting control incentives are only available for control of eligible energy efficient lighting fixtures.
5. If more than one eligible lighting control device is associated with the same eligible fixture, the incentive paid will be for the lighting control device that yields the largest incentive only.
6. Occupancy Sensor Controls (Existing Facilities Only):
   - There is no incentive available for occupancy sensors installed in a space where they are prohibited by state or local building or safety code. Additionally, no incentive is eligible for occupancy sensors in the following specific spaces in all cases: stairways, restrooms (remote mounted only allowed), elevators, corridors/hallways, lobbies, and closets/storage areas.
   - Incentives will only be paid for eligible occupancy sensors (OSW & OSR) controlling at least 2 eligible lighting fixtures and, for OSR installations, a minimum total connected load of 180 watts.
   - Incentives will only be paid for eligible OSRH occupancy sensors controlling eligible fixtures when the controlled wattage is greater than 180 watts.
   - Occupancy sensors with manual override to the "ON" position are ineligible for incentive.
7. High-Low Controls (OHLF and OHLH):
   - Incentives will not be paid for high-low controls on eligible fluorescent fixtures where daylight dimming controls can be effectively employed.
   - Incentives will not be paid for spaces where the bottom of the fixture does not comply with the appropriate Prescriptive Lighting 2008 incentives, nor in spaces smaller than 250 square feet.
   - Incentives available only when "low level" is no more than 60% of "high level."
   - Incentives are not available for the following spaces: stairways, elevators, corridors/hallways, or lobbies.
   - OHLF will control fixtures that have a ballast factor less than 1.0 for T-5s and 1.14 for T-8s.
   - OHLH will control fixtures that have a ballast factor greater than or equal to 1.0 for T-5s and 1.14 for T-8s.
8. Daylight Dimming Controls for Eligible Fixtures:
   - Incentives will only be paid for eligible daylight dimming controls operating at least 4 eligible ballasts with a minimum total connected load of 240 watts.
   - Dimming shall be continuous or stepped at 4 or more levels.
   - Incentives will be paid only for eligible daylight dimming control systems designed in accordance with IESNA practice as delineated in "RP-5-99, IESNA Recommended Practice of Daylighting."
   - DLD will control fixtures that have a ballast factor less than 1.0 for T-5s and 1.14 for T-8s.
   - DDH will control fixtures that have a ballast factor greater than or equal to 1.0 for T-5s and 1.14 for T-8s.

ACKNOWLEDGEMENT

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Lighting Control Prescriptive Incentives*

Control Device Type	Incentive per Unit
OSW – Occupancy Sensor Wall Mounted (Existing facilities only)	$20 per control
OSR – Occupancy Sensor Remote Mounted (Existing facilities only)	$35 per control
DLD – Fluorescent Daylight Dimming	$25 per fixture controlled
OHLF – Occupancy Controlled High-Low with Step Ballast	$25 per fixture controlled
OSRH – Occupancy Sensor Remote Mounted	$35 per control
OHLH – Occupancy Controlled High-Low with Step Ballast	$75 per fixture controlled
DDH – Daylight Dimming	$75 per fixture controlled

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Definitions:

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Design Services – Services that may be offered to design professionals under the Program.

Energy-Efficient Measures – Any device eligible to receive a Program Incentive payment through the NJ Clean Energy Commercial and Industrial Program (New Jersey SmartStart Buildings).

New Jersey Utilities – The regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

Administrator – New Jersey Board of Public Utilities, Office of Clean Energy

Participating Customers – Those non-residential electric and/or gas service customers of the New Jersey Utilities who participate in this Program.

Product Installation or Equipment Installation – Installation of the Energy-Efficient Measures.

Market Manager – TRC Energy Services (see below). The NJ Board of Public Utilities has transferred responsibility for the NJ SmartStart Buildings Program from the NJ Utilities to TRC.

Program – The Commercial and Industrial Energy-Efficient Construction Program (New Jersey SmartStart Buildings) offered herein by the New Jersey Board of Public Utilities, Office of Clean Energy pursuant to state regulatory approval under the New Jersey Electric Discount and Energy Competition Act, NJSA 48:3-49, et seq.

Program Incentives – Refers to the amount or level of incentive that the Program provides to participating customers pursuant to the Program offered herein (see description below under "Incentive Amount" heading).

Program Offer – Program Incentives are available to non-residential retail electric and/or gas service customers of the New Jersey Utilities identified above. Program Incentives for new construction are available only for projects in areas designated for growth in the State Plan. Public school (K-12) new construction projects are exempted from this restriction and are eligible for new Program incentives throughout the State. Customers, or their trade allies, can determine if a location is in a designated growth area by referring to the Smart Growth Locator available from the HMFA website or contact the Market Manager if you are uncertain about project eligibility.

Application and Eligibility Process – The Program pays incentives after the installation of qualified energy efficient measures that were pre-approved (for exceptions to this condition, please refer to "exceptions for approval".) In order to be eligible for Program Incentives, a Customer, or an agent (contractor/vendor) authorized by a Customer, must submit a properly completed application package. The package must include an application signed by the customer; a complete (current) utility bill; and technology worksheet and manufacturer's cut sheets (where appropriate). This information must be submitted to the Market Manager before equipment is installed. Applications for measures that are self installed by customers must be submitted by the customer and not the sales vendor of the measure, however, the customer may elect to assign payment of the incentives to the sales vendor. This application package must be received by the Market Manager on or before December 31, 2009 in order to be eligible for 2009 incentives. The Market Manager will review the application package to determine if the project is eligible for a Program Incentive. If eligible, the Customer will receive an approval letter with the estimated authorized incentive amount and the date by which the equipment must be installed in order for the approval to remain in effect. Upon receipt of an approval letter, the Customer may then proceed to install the equipment listed on the approved application. Equipment installed prior to the date of the Market Manager's approval letter is not eligible for an incentive. The Market Manager reserves the right to conduct a pre-inspection of the facility prior to the installation of equipment. This will be done prior to the issuance of the approval letter. All equipment must be purchased within 12 months of date of application. **Any Customer and/or Agent who purchases equipment prior to the receipt of an incentive approval letter does so at his/her own risk.**

Exceptions for Approval – The Application and Eligibility Process pertains to all projects except for those involving either Unitary HVAC or Motors having an incentive amount less than $5,000. These measures, at this incentive level, may be installed without prior approval. In addition, but at the sole discretion of the Market Manager, emergency replacement of equipment may not require a prior approval determination and letter. **In such cases, please notify the Market Manager of such emergencies as early as possible, that an application will soon be sent in that was not pre-approved.**

Post Installation Approval – After installation is completed, the Customer, or an agent authorized by the Customer, must finalize and submit an invoice for the purchase of the equipment (material cost must be broken out from labor costs), and any other required documentation as specified on the equipment application or in the Market Manager's initial approval letter.

Please refer to the Program Guide on the NJCleanEnergy.com/ssb website for the complete Application and Eligibility Process.

The Market Manager reserves the right to verify sales transactions and to have reasonable access to Participating Customer's facility to inspect both pre-existing product or equipment (if applicable) and the Energy-Efficient Measures installed under this Program, either prior to issuing incentives or at a later time.

Energy-Efficient Measures must be installed in buildings located within a New Jersey Utilities' service territory and designated on the Participating Customer's incentive application. Program Incentives are available for qualified Energy-Efficient Measures as listed and described in the Program materials and incentive applications. The Participating Customer must ultimately own the equipment, either through an up-front purchase or at the end of a short-term lease. (Design Incentives are available to design professionals as described in the Program materials and applications. A different and separate agreement must be executed by participating design professionals to be eligible for this type of incentive. The design professional does not need to be based in New Jersey.)

Equipment procured by Participating Customers through another program offered by New Jersey's Clean Energy Program or the New Jersey Utilities, as applicable, is not eligible for incentives through this program. Customers who have not contributed to the Societal Benefits Charge of the applicable New Jersey Utility are not be eligible for incentives offered through this program.

Incentive Amount – Program Incentives will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less, as determined by the Market Manager. Products offered at no direct cost to the customer are ineligible. Incomplete application submissions, applications requiring inspections and unanticipated high volume of activities may cause processing delays. Program Incentives are limited to $500,000 per utility account in a calendar year. Contact the Market Manager regarding any questions.

Tax Liability – The Market Manager will not be responsible for any tax liability that may be imposed on any Participating Customer as a result of the payment of Program Incentives. All Participating Customers must supply their Federal Tax Identification number or social security number to the Market Manager on the application form in order to receive a Program Incentive. In addition, Participating Customers must also provide a Tax Clearance Form (Business Assistance or Incentive Clearance Certificate) that is dated within 90 days of equipment installation

Endorsement – The Market Manager and Administrator do not endorse, support or recommend any particular manufacturer, product or system design in promoting this Program.

Warranties – THE MARKET MANAGER AND ADMINISTRATOR DO NOT WARRANT THE PERFORMANCE OF INSTALLED EQUIPMENT, AND/OR SERVICES RENDERED AS PART OF THIS PROGRAM, EITHER EXPRESSLY OR IMPLICITLY. NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, INCLUDING, WITHOUT LIMITATIONS, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING EQUIPMENT OR SERVICES PROVIDED BY A MANUFACTURER OR VENDOR. CONTACT YOUR VENDOR/SERVICES PROVIDER FOR DETAILS REGARDING PERFORMANCE AND WARRANTIES.

Limitation of Liability – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Market Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Market Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Market Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Market Manager under this Program shall be individual, and not joint and/or several.

Assignment – The Participating Customer may assign Program Incentive payments to a specified vendor.

Participating Customer's Certification – Participating Customer certifies that he/she purchased and installed the equipment listed in their application at their defined New Jersey location. Participating Customer agrees that all information is true and that he/she has conformed to all of the Program and equipment requirements listed in the application.

Termination – The New Jersey Board of Public Utilities reserves the right to extend, modify (this includes modification of Program Incentive levels) or terminate this Program without prior or further notice.

Acknowledgement – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Market Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.

2009 Lighting Controls Incentive Worksheet

Customer Information

Company	Facility Address
☐ Check here if multiple worksheets are being submitted for one project/building.	Date Submitted

Lighting Controls Information

For additional fixtures, attach additional sheets and check here ☐

Location	Reason N–New R–Replaced	Control Device Type	Fixture Type Controlled	Watts Controlled per Device	A # of Fixtures Controlled per Device	B # of Units*	C Incentive per Unit	Total Incentive (B x C)
	(Examples) R	OSW	4-lamp, T8		2	4	$20	4 x $20 = $80
	R	OSR	2-lamp, T8		6	2	$35	2 x $35 = $70
	R	DLD	2-lamp, T8			6	$25	6 x $25 = $150
	R	OHLF	4-lamp, T8			12	$25	12 x $25 = $300
	R	OHLH	150w MH		10	5	$75	5 x $75 = $375
	R	DDH	250w HPS		12	4	$75	4 x $75 = $300

*For OSW and OSR, insert number of control devices; for DLD and OHLF, insert total number of ballasts controlled; for OHLH and DDH, insert total number of fixtures controlled.

Total (including additional sheets) ____

Specific Program Requirements* These requirements are in addition to the Program Terms and Conditions.

1. Please refer to the program guide for additional applicable technical requirements, including special requirements for lighting controls.
2. Include the manufacturer's specification sheet with the application package and mail or fax directly to the Commercial/Industrial Market Manager.
3. All lighting controls eligible for incentives must be UL listed.
4. Lighting control incentives are only available for control of eligible energy efficient lighting fixtures.
5. If more than one eligible lighting control device is associated with the same eligible fixture, the incentive paid will be for the lighting control device that yields the largest incentive only.
6. Occupancy Sensor Controls (Existing Facilities Only):
   - There is no incentive available for occupancy sensors installed in a space where they are prohibited by state or local building or safety code. Additionally, no incentive is eligible for occupancy sensors in the following specific spaces in all cases: stairways, restrooms (remote mounted only allowed), elevators, corridors/hallways, lobbies, and closets/storage areas.
   - Incentives will only be paid for eligible occupancy sensors (OSW & OSR) controlling at least 2 eligible lighting fixtures and, for OSR installations, a minimum total connected load of 180 watts.
   - Incentives will only be paid for eligible OSRH occupancy sensors controlling eligible fixtures when the controlled wattage is greater than 180 watts.
   - Occupancy sensors with manual override to the "ON" position are ineligible for incentive.
7. High-Low Controls (OHLF and OHLH):
   - Incentives will not be paid for high-low controls on eligible fluorescent fixtures where daylight dimming controls can be effectively employed.
   - Incentives will not be paid for spaces where the bottom of the fixture does not comply with the appropriate Prescriptive Lighting 2008 incentives, nor in spaces smaller than 250 square feet.
   - Incentives available only when "low level" is no more than 60% of "high level."
   - Incentives are not available for the following spaces: stairways, elevators, corridors/hallways, or lobbies.
   - OHLF will control fixtures that have a ballast factor less than 1.0 for T-5s and 1.14 for T-8s.
   - OHLH will control fixtures that have a ballast factor greater than or equal to 1.0 for T-5s and 1.14 for T-8s.
8. Daylight Dimming Controls for Eligible Fixtures:
   - Incentives will only be paid for eligible daylight dimming controls operating at least 4 eligible ballasts with a minimum total connected load of 240 watts.
   - Dimming shall be continuous or stepped at 4 or more levels.
   - Incentives will be paid only for eligible daylight dimming control systems designed in accordance with IESNA practice as delineated in "RP-5-99, IESNA Recommended Practice of Daylighting."
   - DLD will control fixtures that have a ballast factor less than 1.0 for T-5s and 1.14 for T-8s.
   - DDH will control fixtures that have a ballast factor greater than or equal to 1.0 for T-5s and 1.14 for T-8s.

Lighting Control Prescriptive Incentives*

Control Device Type	Incentive per Unit
OSW – Occupancy Sensor Wall Mounted (Existing facilities only)	$20 per control
OSR – Occupancy Sensor Remote Mounted (Existing facilities only)	$35 per control
DLD – Fluorescent Daylight Dimming	$25 per fixture controlled
OHLF – Occupancy Controlled High-Low with Step Ballast	$25 per fixture controlled
OSRH – Occupancy Sensor Remote Mounted	$35 per control
OHLH – Occupancy Controlled High-Low with Step Ballast	$75 per fixture controlled
DDH – Daylight Dimming	$75 per fixture controlled

Mail or fax your application package DIRECTLY to the Commercial/Industrial Market Manager.

New Jersey's Clean Energy Program
c/o TRC Energy Services
900 Route 9 North, Suite 104
Woodbridge, NJ 07095

Phone: 866-657-6278
Fax: 732-855-0422

Visit our web site: www.NJCleanEnergy.com

NJ SmartStart Buildings®

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Limitation of Liability – By virtue of participating in this Program, Participating Customers agree to waive any and all claims or damages against the Market Manager or the Administrator, except the receipt of the Program Incentive. Participating Customers agree that the Market Manager's and Administrator's liability, in connection with this Program, is limited to paying the Program Incentive specified. Under no circumstances shall the Market Manager, its representatives, or subcontractors, or the Administrator, be liable for any lost profits, special, punitive, consequential or incidental damages or for any other damages or claims connected with or resulting from participation in this Program. Further, any liability attributed to the Market Manager under this Program shall be individual, and not joint and/or several.

Assignment – The Participating Customer may assign Program Incentive payments to a specified vendor.

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Acknowledgement – I have read, understood and am in compliance with all rules and regulations concerning this incentive program. I certify that all information provided is correct to the best of my knowledge, and I give the Market Manager permission to share my records with the New Jersey Board of Public Utilities, and contractors it selects to manage, coordinate or evaluate the NJ SmartStart Buildings Program. Additionally, I allow reasonable access to my property to inspect the installation and performance of the technologies and installations that are eligible for incentives under the guidelines of New Jersey's Clean Energy Program.

New Jersey Clean Energy Program

Technical Worksheet – Solar Electric Equipment Information

Please carefully read all of the following information. With the help of your Installation Contractor, fully complete Sections A through D, as applicable, of the attached Technical Worksheet for Solar Electric Equipment, as well as the New Jersey Clean Energy Program Rebate Application Form.

GENERAL TERMS AND CONDITIONS

Rebates will be processed based on the date the New Jersey Clean Energy Program (NJCEP) approves the Final Application Form, not on the purchase date of the equipment. Program procedures and rebates are subject to change or cancellation without notice.

To qualify for a rebate, Applicant must comply with all Program Eligibility Requirements, Terms and Conditions, and Installation Requirements, and submit a completed Pre-Installation Application Form. For more information about the New Jersey Clean Energy Program, or for assistance in completing applications or forms, please see www.njcleanenergy.com or call 866-NJSMART

INSTALLATION REQUIREMENTS

Equipment installation must meet the following minimum requirements in order to qualify for payment under the provisions of the New Jersey Clean Energy Program; proposed changes to the requirements will be considered, but they must be documented by the Applicant or Installation Contractor and approved by the NJCEP. These requirements are not all-encompassing and are intended only to address certain minimum safety and efficiency standards.

A: Code Requirements

1. The installation must comply with the provisions of the National Electrical Code and all other applicable local, state and federal codes or practices.
2. All required permits must be properly obtained and posted.
3. The NJCEP Inspection must be performed before the local Building Code Enforcement Office. If not, this may delay the processing of the rebate
4. All required inspections must be performed (i.e., Electrical/NEC, Local Building Codes Enforcement Office, etc.). Note: In order to ensure compliance with provisions of the NEC, an inspection by a state-licensed electrical inspector is mandatory.

B: Solar Electric Module Array

1. Modules must be UL Listed and must be properly installed according to manufacturer's instructions.
2. The maximum amount of sunlight available year-round on a daily basis should not be obstructed. All applications must include documentation of the impact from any obstruction on the annual performance of the solar electric array. This analysis can be performed by using the New Jersey Clean Power Estimator on the program website www.njcep.com.
3. In order to qualify for program incentives, the solar electric system must adhere to a minimum design threshold, relative to the estimated system production using PVWATTS:
    - Solar electric array orientations require that the calculated system output must be at least 80% of the default output calculated by PVWatts. Additionally, all individual series strings of modules output must be at least 70% of the default output calculated by PVWatts.
    - For building integrated solar electric systems (i.e., part of the building envelope materials are comprised of solar electric components), the estimated system output must be 40% of the default output estimated by PVWATTS.
4. System wiring must be installed in accordance with the provisions of the NEC.
5. All modules installed in a series string must be installed in the same plane.

C: Inverter and Controls

1. The inverter and controls must be properly installed according to manufacturer's instructions.
2. The inverter must be certified as compliant with the requirements of IEEE 929 for small photovoltaic systems and with UL 1741.
3. The system should be equipped with the following visual indicators and/or controls:
    - On/off switch • Operating mode setting indicator • AC/DC over current protection • Operating status indicator
4. Warning labels must be posted on the control panels and junction boxes indicating that the circuits are energized by an alternate power source independent of utility-provided power.
5. Operating instructions must be posted on or near the system, or on file with facilities operation and maintenance documents.
6. Systems must have monitoring capability that is readily accessible to the owner. This monitor (meter or display) must at minimum display instantaneous and cumulative production. All projects greater than 10kW must have an output meter that meets ANSI C.12 standards

D: Control Panel to Solar Electric Array Wire Runs

1. Areas where wiring passes through ceilings, walls or other areas of the building must be properly restored, booted and sealed.
2. All interconnecting wires must be copper. (Some provisions may be made for aluminum wiring; approval must be received from utility engineering departments prior to acceptance.)
3. Thermal insulation in areas where wiring is installed must be replaced to "as found or better condition." Access doors to these areas must be properly sealed and gasketed.
4. Wiring connections must be properly made, insulated and weather-protected.
5. All wiring must be attached to the system components by the use of strain relief's or cable clamps, unless enclosed in conduit.
6. All outside wiring must be rated for wet conditions and/or encased in liquid-tight conduit.
7. Insulation on any wiring located in areas with potential high ambient temperature must be rated at 90° C or higher.
8. All wiring splices must be contained in UL-approved workboxes.

E: Batteries (If Applicable)

1. The batteries must be installed according to the manufacturer's instructions.
2. Battery terminals must be adequately protected from accidental contact.
3. DC-rated over current protection must be provided in accordance with the provisions of the NEC.

New Jersey Clean Energy Program

Technical Worksheet – Solar Electric Equipment Information

Original Application Date: _____ Revised Application Date: _____

Customer Name: _____ Application Number: _____

(Corresponding to Rebate Application Form) (Assigned by the NJBPU)

A: EQUIPMENT INFORMATION

1. Solar Electric Module Manufacturer: _____ Module Model Number: _____
2. Power Rating per Module: _____ DC Watts (Refer to STC conditions) Number of Modules: _____
3. Total Array Output: _____ DC Watts (No. of Modules x Power Rating)
4. Inverter Manufacturer: _____ Inverter Model Number: _____
5. Inverter's Continuous AC Rating: _____ AC Watts Number of Inverters: _____
6. Total Inverter Output: _____ AC Watts (Inverter Continuous AC Rating x Number of Inverters)
7. Inverter's Peak Efficiency: _____ (Refer to manufacturer's peak efficiency rating)

B: PROPOSED INSTALLATION/INTERCONNECTION INFORMATION

1. Solar Electric Array Location: _ Rooftop _ Pole Mount or Ground Mount Location:
2. Solar Electric Module Orientation: _____ degrees (e.g., 180 degrees magnetic south)

   Note: in Central New Jersey, magnetic south compass reading is 10 degrees east of true south.
3. Solar Electric Module Tilt: _____ degrees (e.g., flat mount = 0 degrees; vertical mount = 90 degrees)
4. Solar Electric Module Tracking: _Fixed _Single-axis _Double-axis
5. Inverter Location: _ Indoor _ Outdoor Location: _____
6. Utility-Accessible AC Disconnect Switch Location: _____
7. System Type and Mode of Operation:
   - _ Utility interactive (parallel/capable of back feeding the meter) (_ with battery backup)
   - _ Dedicated circuit, utility power as backup (transfer switch) (_ with battery charging)
   - _ Stand-alone (system confined to an independent circuit, no utility backup) (_ with battery charging)

C: INCENTIVE REQUEST CALCULATION

1. System rated output (Section A, line 3 above): _____ DC Watts
2. Incentive Calculation (Calculate appropriate incentive based on System Rated Output):

Residential Applicants that perform Energy Efficiency Audit

a. 0 to 10,000 Watts x $1.75/Watt = $_____+

Residential Applicants that <u>do not</u> perform Energy Efficiency Audit

b. 0 to 10,000 Watts x $1.55/Watt = $_____+

Commercial, Farm, Public and Non-Profit

0 to 50,000 Watts x $1.00/Watt = $_____+

<u>Large PV Project Applications</u>

> 50,000 Watts = $____Not eligible for rebates_____

d. Total Rebate Calculation: $_____

Total Rebate Calculation: $_____

3. School Applicants: Maximum Annual School Rebate: $_____
   (For Public School applicants, enter the lesser value from no. 6 on the School Application form or $50,000)
4. Total Installed System Cost: $_____
   (Eligible installed system cost includes all equipment, installation, and applicable interconnection costs before the New Jersey Clean Energy Program incentive.)
5. **Requested Incentive** (Enter the appropriate value from C2. b or c): $_____

D: WARRANTY INFORMATION

1. Module: _____ Years at _____ Percent of Rated Power Output 2. Inverter: _____ Years 3. Installation: _____ Years

Revised January 2009

APPENDIX H

CONSTRUCTION ESTIMATES

CDM

15 British American Blvd
Latham, NY 12110
Phone (518) 782-4500
Fax (518) 786-3810

PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon Regional School District
Estimate by: RKA
Checked by: MG

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
1	**Voorhees High School** Thermostat, 24 hour, automatic, clock	19	ea.	$ 115.00	$ 2,185.00	19	ea.	$ 57.00	$ 1,083.00	$ 3,268.00
	Subtotal				2,185.00				1,083.00	

SUBTOTAL =	$	3,268.00
MARKUP % =	$	0.15
MARKUP =	$	490.20
SUB-TOTAL w/ OH & P =	$	3,758.20
CONTINGENCY % =		0.25
CONTINGENCY =	$	939.55
BUDGET COST ESTIMATE =	$	4,697.75

CDM

15 British American Blvd
Latham, NY 12110
Phone (518) 782-4500
Fax (518) 786-3810

PROJECT CONSTRUCTION COST ESTIMATE

Location: North Huntendon Regional School District
Estimate by: RKA
Checked by: MG

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	Vorhees									
	Heat Recovery Ventilators- Max 1000 cfm	2	ea.	$ 6,050.00	$ 12,100.00	2	ea.	$ 565.00	$ 1,130.00	$ 13,230.00
	Heat Recovery Ventilators- Max 2000 cfm	2	ea.	$ 7,075.00	$ 14,150.00	2	ea.	$ 680.00	$ 1,360.00	$ 15,510.00
	Heat Recovery Ventilators- Max 4,000 cfm	5	ea.	$ 8,200.00	$ 41,000.00	5	ea.	$ 850.00	$ 4,250.00	$ 45,250.00
	Heat Recovery Ventilators- Max 6,000 cfm	5	ea.	$ 9,575.00	$ 47,875.00	5	ea.	$ 970.00	$ 4,850.00	$ 52,725.00
	Heat Recovery Ventilators- Max 8,000 cfm	2	ea.	$ 10,600.00	$ 21,200.00	2	ea.	$ 1,050.00	$ 2,100.00	$ 23,300.00
	Heat Recovery Ventilators- Max 10,000 cfm	1	ea.	$ 12,700.00	$ 12,700.00	1	ea.	$ 1,175.00	$ 1,175.00	$ 13,875.00
	Heat Recovery Ventilators- Max 20,000 cfm	1	ea.	$ 22,900.00	$ 22,900.00	1	ea.	$ 1,325.00	$ 1,325.00	$ 24,225.00
1	Heat Recovery Ventilators- Max 25,000 cfm	1	ea.	$ 28,000.00	$ 28,000.00	1	ea.	$ 1,500.00	$ 1,500.00	$ 29,500.00
	Subtotal				28,000.00				1,500.00	

SUBTOTAL =	$	217,615.00
MARKUP % =	$	0.15
MARKUP =	$	32,642.25
SUB-TOTAL w/ OH & P =	$	250,257.25
CONTINGENCY % =		0.25
CONTINGENCY =	$	62,564.31
BUDGET COST ESTIMATE =	$	312,821.56

CDM

15 British American Blvd
Latham, NY 12110
Phone (518) 782-4500
Fax (518) 786-3810

PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	North Hunterdon High School									
	Lamps, fixtures, ballasts, occupancy sensors.	1	ls.	47,265.50	47,265.50	1	ls.	$ 11,385.10	11,385.10	58,650.60
	Subtotal				47,265.50				11,385.10	

SUBTOTAL =	$	58,650.60
MARKUP % =	$	0.43
MARKUP =	$	25,219.76
BUDGET COST ESTIMATE =	$	83,870.36

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	North Hunterdon - District Admin Building									
	Lamps, fixtures, ballasts, etc.	1	ls.	7,275.00	7,275.00	1	ls.	$ 3,620.00	3,620.00	10,895.00
	Subtotal				7,275.00				3,620.00	

SUBTOTAL =	$	10,895.00
MARKUP % =	$	0.43
MARKUP =	$	4,684.85
BUDGET COST ESTIMATE =	$	15,579.85

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	North Hunterdon - Facilities/Tech Office									
	Lamps, fixtures, ballasts, etc.	1	ls.	875.00	875.00	1	ls.	$ 400.00	400.00	1,275.00
	Subtotal				875.00				400.00	

SUBTOTAL =	$	1,275.00
MARKUP % =	$	0.43
MARKUP =	$	548.25
BUDGET COST ESTIMATE =	$	1,823.25

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	North Hunterdon - Maitenance Garage									
	Lamps, fixtures, ballasts, etc.	1	ls.	1,847.50	1,847.50	1	ls.	$ 1,120.00	1,120.00	2,967.50
	Subtotal				1,847.50				1,120.00	

SUBTOTAL =	$	2,967.50
MARKUP % =	$	0.43
MARKUP =	$	1,276.03
BUDGET COST ESTIMATE =	$	4,243.53

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	Voorhees High School									
	Lamps, fixtures, ballasts, etc.	1	ls.	27,397.50	27,397.50	1	ls.	$ 5,338.20	5,338.20	32,735.70
	Subtotal				27,397.50				5,338.20	

SUBTOTAL =	$	32,735.70
MARKUP % =	$	0.43
MARKUP =	$	14,076.35
BUDGET COST ESTIMATE =	$	46,812.05

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	Voorhees - Maitenance Garage									
	Lamps, fixtures, ballasts, etc.	1	ls.	353.00	353.00	1	ls.	$ 224.50	224.50	577.50
	Subtotal				353.00				224.50	

SUBTOTAL =	$	577.50
MARKUP % =	$	0.43
MARKUP =	$	248.33
BUDGET COST ESTIMATE =	$	825.83

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	North Hunterdon High School									
	Solar System	1	ls.	3,811,935.00	3,811,935.00	1	ls.	$ 1,270,645.00	1,270,645.00	5,082,580.00
	Subtotal				3,811,935.00				1,270,645.00	

SUBTOTAL =	$	5,082,580.00
MARKUP % =	$	0.15
MARKUP =	$	762,387.00
BUDGET COST ESTIMATE =	$	5,844,967.00

CDM

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PROJECT CONSTRUCTION COST ESTIMATE

Location: North Hunterdon - Voorhees School District
Estimate by: RNG
Checked by: JM

ITEM	DESCRIPTION	QTY	UNIT	MATERIAL UNIT COST	MATERIAL SUBTOTAL	QTY	UNIT	LABOR COST	LABOR SUBTOTAL	TOTAL
	Voorhees High School									
	Solar System	1	ls.	3,396,135.00	27,397.50	1	ls.	$ 1,132,045.00	1,132,045.00	1,159,442.50
	Subtotal				27,397.50				1,132,045.00	

SUBTOTAL =	$	1,159,442.50
MARKUP % =	$	0.15
MARKUP =	$	173,916.38
BUDGET COST ESTIMATE =	$	1,333,358.88

APPENDIX I

FACILITY DATA FORMS

APPENDIX C - FACILITY DATA FORM

Complete one Facility Data Form for <u>each</u> building. If you are seeking to energy audit multiple buildings, complete one Facility Data Form for each

FACILITY INFORMATION

Please complete the information below for this specific facility that is seeking enrollment in the Program.

Facility Name
North Hunterdon High School

Street Address
1445 Route 31

County

City
Annandale

State
NJ

Zip
08801

Facility's Description
Public High School
Grades 9 - 12

Total Sq Ft	Year Built	Hours/Week Occupied	Number of Employees
284,219	1950 (Additions in '67, '68, '03)	100+	265 (+1846 Students)

Building Type (Check only one of the following):

☐	Emergency Services	☐	Garage
☐	Center/Meeting Hall/Library	☐	Offices
☐	Recreation/Entertainment/Parks	☐	Religious
☒	School	☐	School: College
☐	Water Treatment/Pumping	☐	Other:

ENERGY DATA

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The Data Below is for the 12 Month Period: 4 / 1 / 2008 to 4 / 1 / 2009

ELECTRICITY

Electric Utility Name & Account Number(s)

JCP&L 100004689703

Annual kWh Use

3,752,728

Annual Electricity Cost

$610,596

Max Summer kW

966

Max Winter kW

1231

NATURAL GAS

Natural Gas Utility Name & Account Number(s)

Elizabethtown Gas (supplier) 6583570581

Woodruff Energy (distribution) 510-598

Annual Use in Therms

124,618

Annual Natural Gas Cost

$47,508

FUEL OIL

Fuel Oil Utility Name & Account Number(s)

NA

Annual Use in Gallons

Annual Fuel Oil Cost

PROPANE

Propane Utility Name & Account Number(s)

NA

Annual Use in Gallons

Annual Propane Cost

OTHER

In this section please indicate any other fuel type that the facility uses, such as. solar energy, wind energy, bio-fuel, cogeneration, fuel cells

Other Fuel Type:

NA

Annual Energy Use (indicate units)

Annual Energy Cost

STAFF USE ONLY

Date Received: _____ Project No.: _____

APPENDIX C - FACILITY DATA FORM

*Complete one Facility Data Form for **each** building. If you are seeking to energy audit multiple buildings, complete one Facility Data Form for each.*

FACILITY INFORMATION

Please complete the information below for this specific facility that is seeking enrollment in the Program.

Facility Name
Voorhees High School

Street Address
County Rt. 513

County

City
Glen Gardner

State
NJ

Zip
08826

Facility's Description
Public High School, Grades 9 12

Total Sq Ft	Year Built	Hours/Week Occupied	Number of Employees
276,312	1975 (Addn '80)	1,004	194 (+1182 Students)

Building Type (Check only one of the following):

☐	Emergency Services	☐	Garage
☐	Center/Meeting Hall/Library	☐	Offices
☐	Recreation/Entertainment/Parks	☐	Religious
☒	School	☐	School: College
☐	Water Treatment/Pumping	☐	Other:

ENERGY DATA

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel

The Data Below is for the 12 Month Period: 4/1/08 to 4/1/09

ELECTRICITY

Electric Utility Name & Account Number(s)	
JCP&L 100003854401	
Annual kWh Use	**Annual Electricity Cost**
3,167,300	$509,632
Max Summer kW	**Max Winter kW**
776	860

NATURAL GAS

Natural Gas Utility Name & Account Number(s)	
NA	
Annual Use in Therms	**Annual Natural Gas Cost**

FUEL OIL

Fuel Oil Utility Name & Account Number(s)	
Allied Oil, LLC 433240 + 433241	
Annual Use in Gallons	**Annual Fuel Oil Cost**
59,146 gal	$97,665

PROPANE

Propane Utility Name & Account Number(s)	
NA	
Annual Use in Gallons	**Annual Propane Cost**

OTHER

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

NA

Annual Energy Use (indicate units)	Annual Energy Cost

STAFF USE ONLY

Date Received: _____ Project No.: _____

APPENDIX C - FACILITY DATA FORM

*Complete one Facility Data Form for **each** building. If you are seeking to energy audit multiple buildings, complete one Facility Data Form for each*

FACILITY INFORMATION

Please complete the information below for this specific facility that is seeking enrollment in the Program.

Facility Name
District Administration Office

Street Address
1445 State Rt 31

County

City
Annandale

State
NJ

Zip
08801

Facility's Description
Office

Total Sq Ft	Year Built	Hours/Week Occupied	Number of Employees
9,028	1988	50	14

Building Type (Check only one of the following):

☐	Emergency Services	☐	Garage
☐	Center/Meeting Hall/Library	☒	Offices
☐	Recreation/Entertainment/Parks	☐	Religious
☐	School	☐	School: College
☐	Water Treatment/Pumping	☐	Other: _____

ENERGY DATA

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The Data Below is for the 12 Month Period: 4/13/08 to 4/13/09

ELECTRICITY

Electric Utility Name & Account Number(s)	
JCP&L 100003688007	
Annual kWh Use: 76,101	Annual Electricity Cost: $16,943
Max Summer kW: 22	Max Winter kW: 158

NATURAL GAS

Natural Gas Utility Name & Account Number(s)	
NA	
Annual Use in Therms:	Annual Natural Gas Cost:

FUEL OIL

Fuel Oil Utility Name & Account Number(s)	
Allied Fuel, LLC 433255	
Annual Use in Gallons: 1,260	Annual Fuel Oil Cost: $2,168

PROPANE

Propane Utility Name & Account Number(s)	
NA	
Annual Use in Gallons:	Annual Propane Cost:

OTHER

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:	
NA	
Annual Energy Use (indicate units):	Annual Energy Cost:

STAFF USE ONLY

Date Received:	Project No.:

APPENDIX C - FACILITY DATA FORM

*Complete one Facility Data Form for **each** building. If you are seeking to energy audit multiple buildings, complete one Facility Data Form for each.*

FACILITY INFORMATION

Please complete the information below for this specific facility that is seeking enrollment in the Program.

Facility Name
Facilities & Technology Office

Street Address
1445 Rt 31

County

City
Annandale

State
NJ

Zip
08801

Facility's Description
Office

Total Sq Ft	Year Built	Hours/Week Occupied	Number of Employees
880	1988	50	6

Building Type (Check only one of the following):

☐	Emergency Services	☐	Garage
☐	Center/Meeting Hall/Library	☒	Offices
☐	Recreation/Entertainment/Parks	☐	Religious
☐	School	☐	School: College
☐	Water Treatment/Pumping	☐	Other:

ENERGY DATA

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The Data Below is for the 12 Month Period: 4/13/08 to 4/13/09

ELECTRICITY

Electric Utility Name & Account Number(s)

JCP&L 100003687710

Annual kWh Use	Annual Electricity Cost
35,635	$ 5,892

Max Summer kW	Max Winter kW
2.9	2.9

NATURAL GAS

Natural Gas Utility Name & Account Number(s)

NA

Annual Use in Therms	Annual Natural Gas Cost

FUEL OIL

Fuel Oil Utility Name & Account Number(s)

NA

Annual Use in Gallons	Annual Fuel Oil Cost

PROPANE

Propane Utility Name & Account Number(s)

NA

Annual Use in Gallons	Annual Propane Cost

OTHER

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

NA

Annual Energy Use (indicate units)	Annual Energy Cost

STAFF USE ONLY

Date Received: _____ Project No.: _____

APPENDIX C - FACILITY DATA FORM

*Complete one Facility Data Form for **each** building. If you are seeking to energy audit multiple buildings, complete one Facility Data Form for each.*

FACILITY INFORMATION

Please complete the information below for this specific facility that is seeking enrollment in the Program.

Facility Name
North Hunterdon H.S. Maintenance Garage

Street Address
1445 Rt 31

County

City
Annandale

State
NJ

Zip
08801

Facility's Description
Grounds Maintenance Garage

Total Sq Ft	Year Built	Hours/Week Occupied	Number of Employees
2,250	1988	48	5

Building Type (Check only one of the following):

☐	Emergency Services	☒	Garage
☐	Center/Meeting Hall/Library	☐	Offices
☐	Recreation/Entertainment/Parks	☐	Religious
☐	School	☐	School: College
☐	Water Treatment/Pumping	☐	Other: _____

ENERGY DATA

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The Data Below is for the 12 Month Period: 4/13/08 to 4/13/09

ELECTRICITY

Electric Utility Name & Account Number(s)

JCP&L 100003687884

Annual kWh Use	Annual Electricity Cost
30,152	$ 6,063

Max Summer kW	Max Winter kW
6.9	6.9

NATURAL GAS

Natural Gas Utility Name & Account Number(s)

NA

Annual Use in Therms	Annual Natural Gas Cost

FUEL OIL

Fuel Oil Utility Name & Account Number(s)

NA

Annual Use in Gallons	Annual Fuel Oil Cost

PROPANE

Propane Utility Name & Account Number(s)

Amerigas 751000 3357

Annual Use in Gallons	Annual Propane Cost
3,575	$ 10,884

OTHER

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:

NA

Annual Energy Use (indicate units)	Annual Energy Cost

STAFF USE ONLY

Date Received: _____ Project No.: _____

APPENDIX C - FACILITY DATA FORM

*Complete one Facility Data Form for **each** building. If you are seeking to energy audit multiple buildings, complete one Facility Data Form for each.*

FACILITY INFORMATION

Please complete the information below for this specific facility that is seeking enrollment in the Program.

Facility Name
Voorhees High School Maintenance Garage

Street Address
County Rt 513

County

City
Glen Gardner

State
NJ

Zip
08826

Facility's Description
Grounds Maintenance Garage

Total Sq Ft	Year Built	Hours/Week Occupied	Number of Employees
2,500	1988	48	3

Building Type (Check only one of the following):

☐	Emergency Services	☒	Garage
☐	Center/Meeting Hall/Library	☐	Offices
☐	Recreation/Entertainment/Parks	☐	Religious
☐	School	☐	School: College
☐	Water Treatment/Pumping	☐	Other:

ENERGY DATA

Please complete the energy information below for the most recent 12 month period available. In order to gain a complete picture of the facility's energy use, be sure to include all types of energy used by the facility. Do not include vehicle fuel.

The Data Below is for the 12 Month Period: 4/13/08 to 4/13/09

ELECTRICITY

Electric Utility Name & Account Number(s)	
JCP&L 1000038 54443	
Annual kWh Use 9,830	**Annual Electricity Cost** $2,082
Max Summer kW 6.9	**Max Winter kW** 1.3

NATURAL GAS

Natural Gas Utility Name & Account Number(s)	
NA	
Annual Use in Therms	**Annual Natural Gas Cost**

FUEL OIL

Fuel Oil Utility Name & Account Number(s)	
Allied Oil, LLC 433252	
Annual Use in Gallons 1900	**Annual Fuel Oil Cost** $3,083

PROPANE

Propane Utility Name & Account Number(s)	
NA	
Annual Use in Gallons	**Annual Propane Cost**

OTHER

In this section please indicate any other fuel type that the facility uses, such as: solar energy, wind energy, bio-fuel, cogeneration, fuel cells.

Other Fuel Type:	
NA	
Annual Energy Use (indicate units)	**Annual Energy Cost**

STAFF USE ONLY

Date Received:	Project No.: